The Canadian
Medical Association Journal

Vol. XVII TORONTO, JULY, 1927 No. 7

An Address
ON
THEN AND NOW

By F. N. G. Starr, C.B.E., M.D.

Being the Presidential Address delivered at the 58th Annual Meeting of the Canadian Medical Association in Toronto

MY first duty is to thank you for the high honour that has come to me through the goodwill of the members of the Canadian Medical Association. My privilege is to thank His Honour, the Lieutenant Governor of Ontario, the Prime Minister of Ontario, the Mayor of Toronto, the Local Committee, the many other institutions, and private individuals who have contributed to the pleasure and success of the meeting by their generous hospitality, and to the energetic band of ladies, who have laboured without stint to make this meeting of the Canadian Medical Association in every way a noteworthy one. Last but by no means least, I wish to thank my wife, who has given me constant support and encouragement, lightening in every way the burden that rests upon the shoulders of the President of this great organization.

A note of sadness enters unfortunately into what otherwise would be a wonderful jubilation over the success of this meeting. In March of this year the President of the Ontario Medical Association, and by virtue of that office, first Vice-President of the Canadian Medical Association, Dr. Edgar Brandon of North Bay, was suddenly called by death. Dr. Brandon who had been co-operating with us in a most enthusiastic manner to make this meeting the best the Canadian Medical Association has seen, was a noble and capable soul and will be greatly missed in the community in which he practised, and by his medical confrères throughout the province.

Though the Canadian Medical Association was founded in 1867, dating back to the year of Confederation, my first acquaintance with this Association was made in 1893. Its organization signalized an attempt to develop a national *esprit de corps* among the medical men of the Dominion. In 1893, however, a motion came before the meeting advising an abandonment of the effort owing to the small Canadian population, and because of the magnificent distances. Dr. Alexander McPhedran, that veteran of persistence and farsightedness, checked such an unfortunate action by suggesting that it might stand as a notice of motion; and this was carried. He then moved that a young man with abundant energy and no practice be made General Secretary. Upon both counts I seemed to qualify, and forthwith became General Secretary. The next meeting in St. John, N.B., was a brilliant success, and the notice of motion was not submitted, nor has it since seen the light of day.

Interprovincial Registration

During the first year I spent much time on the minutes of the preceding meetings, and found that efforts had been made from time to time to bring about some form of interprovincial registration. The matter was first brought to the attention of the profession by the first president of our Association, the late Sir Charles Tupper; three years later fully half of the presidential address of the late Hon. Dr. D. McN. Parker[1] of

Halifax, N.S. (1870-71), was devoted to a discussion of the "Bill," which was prepared for presentation to the Federal House. The late Sir William Osler, when president (1884-85), freshened the interest, looking toward a unification of the profession, but owing to a lack of continuity in the committees, nothing was then accomplished. At the meeting in St. John a committee was appointed to deal with this question, and from year to year the nucleus of this committee was kept together, working not only at the time of the annual meetings, but throughout the year. After two or three years I was able to interest the late Dr. T. G. Roddick of Montreal, and from then on, progress was easy. Dr. Roddick travelled from the Atlantic to the Pacific talking "Dominion Registration," until finally, when he was member of the Federal House, he succeeded in getting the Dominion Medical Bill placed upon the statutes in 1912, while the various provincial legislatures passed an "enabling clause." He telephoned to me about midnight to convey the glad news, and after congratulating him I telegraphed to the head of the Government, advising that Roddick be knighted for his excellent work in unifying the medical profession of Canada. The following spring his name appeared in the Birthday honours.

Since its inception, the Association has failed on only two occasions to hold annual meetings. The meetings have been moved from East to West and from West to East throughout the past half century, offering splendid opportunities to the members of the medical profession in this widespread Dominion to familiarize themselves with the progress of science of medicine in the different provinces.

Financial Difficulties

Sixteen years ago, the Association commenced publication of its own *Journal*. Before this venture had become firmly established, the great war was upon us. Then followed four lean years for the Canadian Medical Association, as the energies, efforts, and interests of the profession were centred naturally upon the duty of the hour. Following the war and the return to practice of hundreds of our colleagues, the Association attempted to rehabilitate itself. The outlook was not too bright. During the war period, while the revenue was greatly diminished, printing and other costs continued to roll up a deficit. In 1921 we found ourselves at the cross-roads, demanding a definite decision. We had either to adopt an aggressive forward policy, or disband. At this time, our membership amounted to only slightly over one thousand members paying an annual fee of $5.00. Our deficit was close upon $18,000 and our assets practically nil.

At the Halifax meeting of that year, the Council decided that the Association would go forward; and the members present endorsed the sentiment by unanimously agreeing to double the annual fee, and to raise by bond subscription a sufficient sum of money to liquidate our indebtedness. The year 1921 will be recorded in history, in so far as the Canadian Medical Association is concerned, as the milestone which marked the road toward a steady upward climb. During the past five years our membership has increased to over 3,500. The liability of $18,000 has been wiped out, and we have a credit balance approximating $12,000. Our budget in 1921 was about $20,000. Our budget in 1926 was just a little under $85,000. He would be a brave man indeed who would now have the courage to suggest that this great organization be broken up. With our present hard-working and efficient General Secretary the Association's activities are ever broadening, and the future is full of promise.

The Association Journal

The *Canadian Medical Association Journal*, a monthly publication, under the editorship of Dr. A. D. Blackader, is recognized to-day, not only in Canada, but in the English speaking world, as one of the best medical periodicals extant. The *Journal* endeavours to be the organ for the publication of all that is valuable in medical work and thought emanating from the profession in Canada. Furthermore, it attempts to keep the profession in Canada in touch with all medical news of national and international interest. It aims to be a useful medium for the exchange of thought between the several provinces, and is an endeavour to keep the world in touch with what Canadian medicine is accomplishing.

Post-Graduate Education

Every broadminded practitioner of medicine realizes the importance of a progressive policy of medical education. The doctor who allows his mental equipment to rust will stagnate. Each decade sees so many contributions made to medical learning and achievement that it behooves the man in practice to keep constantly on the alert for new ideas, improved methods and approved helps. Realizing the importance of all

these facts, the Canadian Medical Association has endeavoured to assist organized medicine throughout Canada in furthering post-graduate plans. We have, thanks to the munificence of the Sun Life Assurance Company, a well organized series of extra-mural lectures, carrying the latest information on medical topics to outlying districts from the Atlantic to the Pacific. During the past year the sum of $30,000 has been expended, in this work. During 1926, 169 teachers delivered 513 lectures to an aggregate attendance of 17,264. One must not forget the goodwill and generosity of the lecturers, men of the highest standing in the medical profession, who are giving freely of their time to help to make this course a brilliant success. Just here it gives me great pleasure to announce that the Sun Life Assurance Company has given us a second $30,000 to carry on extra-mural work for this year.

Every provincial medical association in Canada has expressed its great appreciation of our post-graduate efforts. Hundreds of practitioners have spoken in praise of this splendid type of service. The Canadian Medical Association is the only nationally organized medical association in the world carrying out such an ambitious and extensive extra-mural post-graduate programme. Before long we hope to have in full running order a series of instructional health talks of a sane and salutary tone to be given to the public through the daily and weekly newspapers.

The Conference on Medical Services

The Conference on the Medical Services under the patronage of the Honourable the Federal Minister of Health, Dr. J. H. King, is already bearing fruit. The second conference was held in Ottawa in March last, Dr. Alexander Primrose, chairman of the Council in the chair, and judging by the enthusiasm shown, it gave promise upon its second birthday of being a creditable son of the Canadian Medical Association.

The Inter-relations Committee of the Association

The central staff of the Canadian Medical Association is available to all of the provinces to assist in the organization of district and local medical societies. This service has been used by several of the provinces to the advantage, it is believed, of organized medicine, both locally and nationally. Through a very active Inter-relations Committee, there has developed during the past three years a much improved spirit of co-operation, not only between the profession in the various provinces but in our contact as a profession with the general public of Canada. To such an extent has this developed that we may say that Canadian Clubs, Service Clubs, Boards of Trade, Chambers of Commerce, Government Boards, and in fact all other organized branches of society, to-day recognize the Canadian Medical Association as the spokesman of organized medicine in Canada. This permits not only of real service, but also provides the medical profession in Canada with a forceful and virile organization which, obviously, offers advantages.

Standardization of Drugs

The physician naturally hopes and expects that the drugs which he uses in his practice are as pure and as potent as it is possible to manufacture. Unfortunately, the physician in the great majority of instances, is not in a position to judge whether or not a drug is what it purports to be. Realizing the national importance of this problem, the Canadian Medical Association advised the Federal Department of Health that standardization of drugs, both chemical and physiological, should be a duty of the Government. We are glad to say that the Government frankly admitted the validity of our contentions, and has for the past four years been working upon the establishment of a department whose duty it shall be to make sure that all the drugs being used in Canada are what they should be. This will be of practical service both to the medical profession and to the public.

It is further very interesting to note that, thanks to the representations of the Canadian Medical Association, an invitation has been extended to Canada to appoint a representative on the British Committee charged with the responsibility of revising the British Pharmacopœia.

Work of the Council

The annual meeting grows in interest from year to year. Not so long ago the problem seemed to be, "Where shall we meet next year?" Now, the demand for the meeting is so great that the problem of Council is, "Which invitation shall we accept?" Obviously, we cannot hope in any one year to bring all our members together, realizing that they cover an area of 4,000 miles. The Council, which represents all the provinces of Canada, meets for two or three days at every annual meeting, and endeavours in a most

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deliberative manner to discuss and solve many problems of mutual interest.

Lister Memorial Lecture

Thanks to the foresight of another past-president and to the love he bears for a former master, that sage of the profession, Dr. John Stewart, of Halifax, the Canadian Medical Association was, I think, the first organization to establish a Lister Memorial Lecture to be delivered every third year. Dr. Stewart's forethought, too, is responsible for the recent celebration of Lister's birthday, not only in the colleges in Canada, but also in many colleges in the United States. We are fortunate this year in having Sir Charles Sherrington, Professor of Physiology in the University of Oxford, to deliver the second Lister Memorial Lecture.

Our Future

Upon statesmanship and not upon the setting up of special organizations depends our future. Let me say here, when any group of doctors contemplates organizing a "special" society, don't. Form a section of the Canadian Medical Association, thus strengthening the parent organization, and in turn receiving its prestige, strength, and experience.

There sometimes appears to be too much of the "no" complex in our profession. When one asks a man why he is not a member of the Canadian Medical Association, and his reply is, "What is the use?", that may be true. Such an individual may be of no use to an organization, but the Association can be of great benefit to him and to the patients who depend upon his guidance in time of stress. What we want is more of the "yes" complex, until every reputable medical man is an enthusiastic member of this Association, thus binding the medical profession in a solid phalanx from coast to coast. Then the highest standards and newest achievements in medical science may be within easy reach of every Canadian citizen. We are cultivating at the present time the goodwill and interest of the senior students in our colleges, and have over two hundred subscribers to our *Journal* amongst these young people. When they graduate we want these young Canadians with us in our Association, in order that, as our Honorary Patron, H.R.H. the Prince of Wales, has put it, "Youth should have a handsomer cut at the joint of life." It is great to be young. I think the physician never forgets the thrill experienced when for the first time he realized he had saved a life. Nor does he ever forget the inspiration that comes to him when he thinks out a plan of procedure which to him is quite new.

Reminiscences

Permit me to be personal and recount a few interesting experiences In 1899 I had as a patient a young girl with tuberculous pleurisy. Her chest filled with fluid to such an extent that breathing became very difficult. The fluid was drawn off but the chest immediately refilled, and again breathing became laboured. There were none of the present instruments of precision for producing what we call a pneumothorax. I took with me a bicycle pump carefully sterilized, drew the fluid off again; then attached my bicycle pump to the trocar, covered the air intake with alcohol soaked gauze, and replaced some of the fluid with air. The chest cavity did not refill, and she recovered. Recently in a letter this woman referred to that experience, and to the relief she felt as she settled down to a comfortable sleep. This method of treatment is now well recognized, but through no fault of mine, for to some of the senior men it seemed so drastic that I did not publish the procedure.

Upon entering my third year in Medicine (1887), I had the good fortune to enter the office of the late Dr. W. T. Aikins, then professor of surgery in the University of Toronto. To him and to his teaching I owe a debt of gratitude. What keen observers these old masters were! I recall that one of the first duties assigned me was to reconstruct an armchair with a leg piece attached, in order that a young man with what was then called "white swelling" of the knee could be wheeled from his bed to a platform (which I also built) beside the window. In this way Dr. Aikins planned to expose this young man's tuberculous knee to the direct rays of the sun. This treatment is now the recognized treatment for tuberculous disease, as well as for many other infections.

Richardson,[2] who accompanied Franklin in his expedition to the Polar Sea, gives the first description of goitre in Canada:

> "Bronchocele, or goitre, is a common disorder at Edmonton. I examined several of the inhabitants afflicted with it, and endeavoured to obtain every information on the subject from the most authentic sources. The following facts may be depended upon: the disorder attacks those only who drink from the *water* of the (Saskatchewan) *river*. It is indeed, in its worst state, confined almost entirely to the half-bred women and children who reside constantly at the fort, and make use of river water, drawn, in winter, through a hole made in the ice.

The men, from being often from home on their journeys through the plain, where their drink is *melted snow*, are less affected; and if any of them exhibit during the winter some incipient symptoms of the complaint, the annual summer voyage to the sea-coast generally effects a cure."

In my student days wisdom, whiskers, and mystery went hand in hand, and I can assure you that amongst the bewhiskered leaders there was an abundance of wisdom. When recalling the few aids to diagnosis which these men possessed, it makes one hide one's head in shame, remembering the marvels that were performed. Their powers of observation were amazingly acute and their philosophy astonishing. The microscope for clinical purposes was just coming into its own. Laboratory methods, so much in vogue to-day, were hardly thought of; while that valuable aid, the Roentgen ray (when not used as a master), came many years after.

The mystery was injected by the public, for the early masters in medicine thought much and talked little, and the public looked upon their treatment as mysterious. What courage was exhibited by our own Dr. Hodder of Toronto, a former president of this Association, who, in association with Dr. Bovell, injected cow's milk intravenously to the poor dying cholera patients in Toronto with wonderful results, in one case particularly effecting the prompt recovery of a patient already moribund[3]. What high thought Dr. R. P. Howard of Montreal, another past president, spent before delivering the first clinical lecture ever delivered upon appendicitis as an entity[4]. One might readily exclaim with Miranda, "O brave new world, to have such people in it!".[5]

What thought Croone must have put on the idea of blood transfusion before carrying it out successfully on dogs on November 14, 1666. Then, as described by Pepys: "Myself to Pope's Head where all the Haublons were and Dr. Croone." "This was the occasion for many jibes and comments as to the effect upon an archbishop if a quaker's blood were injected into him."[6]

I recall the days of the Lister Spray, when surgeons worked in a carbolic fog. The spray disappeared but the principles remained. The public at large will never realize the debt of gratitude it owes to that master mind, who revolutionized surgery for the benefit of mankind. Even in my day there were some surgeons who still were not converts. These surgeons came into the operating theatre in their street clothes, rolled up the cuffs of their coat, washed their hands and went to work. Later, one of the doctors appeared in a clean white cotton apron. This was a great advance toward the special operating suits and the sterilized gowns of the present day. Later still, came the sterilized rubber gloves, and what a controversy took place over the dangers of rubber gloves!

What wonders have happened since those days of Lister, when he began to live in Pasteur's "world of the infinitely small." The principal operations performed were confined largely to the extremities; now no part of the human anatomy is a closed book. Consequently, there have been many refinements not only in the technique of operations, but in the methods of producing anæsthesia: now it is almost a privilege to take an anæsthetic in our modern hospitals when administered by one of our experts.

In those early days too, it was a crime to give a post-operative patient a drink of water, while now we encourage the poor thirsty soul to take all he can by mouth or by interstitial injection. Even to typhoid cases, as I know from personal suffering, water was taboo.

I sometimes wonder what might have happened to our Banting had he lived in the sixteenth century, in the days of John Calvin, for you remember how that divine persecuted Servetus, who gave to us the first inkling of the circulation of the blood through the heart and lungs. Finally, after suffering "the most dreadful torture from vermin and filth and various privations," Calvin had him burnt at Geneva, October 27, 1553.

Medical Progress

Progress is being made along every line. The older men present will remember when typhoid fever was rampant all over the country. Every year in the late summer and autumn the hospitals in the cities were crowded with these patients. Now in all civilized and properly organized communities epidemics of typhoid fever have disappeared. Thanks to the late Sir William Leishman and Sir Almroth Wright, if one is travelling to a country where typhoid is prevalent, or the food and water supply doubtful, he can take an inoculation and become immune. No better example of medical progress is seen than that demonstrated in the great war, when so few of the army contracted the disease, whereas in the South African war more soldiers died of this malady than died of wounds. In more detail: in the South African war there was more than one-fourth of the army stricken with ty-

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phoid, while in the great war there was but about one case in over 2,000 men. Hospital gangrene has disappeared, and erysipelas is so rare that one hesitates to make such a diagnosis without the assistance of the laboratory.

Hygiene and hygienic methods have made such marvellous strides that legislative bodies are now taking an active interest in furthering various plans looking to a more healthful world to live in. The teaching of hygiene in the schools is gradually developing generations of healthier children, who are acting as instructors to their parents.

The incidence of diphtheria is greatly reduced. When one thinks of the horrors of past experience, his gratitude to antitoxin is unbounded. I think I may claim the distinction of having administered the first dose of antitoxin given in Ontario, and to Dr. Alexander McPhedran, the father of the patient, and to myself, the effect was little short of miraculous. Now with the new toxoid the danger of the disease is becoming less and less.

Tetanus, too, is easily combated if the profession will but be awake to the dangers of an infected wound, and will give an immunizing dose of anti-tetanic serum when doing the first dressing. Thanks to another British investigator, Sir Ronald Ross, malaria and yellow fever are under control, while other tropical diseases are gradually giving way under the march of progress. Tuberculosis is now controllable, while the life expectancy of man has increased about fifteen years within less than a century.

What shall I say of that most dread disease, cancer? With thousands of investigators working throughout the world, surely it should not be long ere a cure will be found. In the meantime the knife is the safe remedy, and that only when people have the sense to seek relief early; then the outlook is hopeful.

Thus the science of medicine moves on "from strength to strength"; yet we have with us various cults. "They have their day and cease to be." Quackery existed in ancient Greece and had the disapproval of Hippocrates. Mesmer flourished for a time, as did Parker and his tractors. "Wonder cures will always be demanded by the mind of man."[7]. It would hardly be seemly for the medical profession to advertise its cures; sometimes, inadvertently, the press advertises its failures!

We, as doctors, must cultivate wisdom with sympathy, for wisdom without sympathy is almost as useless as sympathy without wisdom. We see examples of this when the kind neighbour, possessing sympathy without wisdom, converts by delay or a dose of castor oil some simple acute condition into a grave surgical disaster, by persuading the overwrought parent either into believing that "the doctor doesn't know," or that "he is too keen on operations." May I in closing say:—

"God temper with tranquillity
Our manifold activity
That we may do our work for Thee
With very great simplicity."

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4. *Montreal Medical Chronicle*, 1858.
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Heart Extract Beat.—A "heart hormone," a physiologically powerful chemical compound secreted within the living heart and acting to keep it beating ceaselessly, has been discovered by Dr. Ludwig Haberlandt, of the University of Innsbruck. It is to be classed with the secretions of the ductless glands, such as the thyroid in the throat and the adrenals near the kidneys, which have far-reaching effects in the lives of men and animals, and some of which are now widely used in medicine.

Professor Haberlandt states that the existence of some such internal chemical stimulus to action had long been suspected, because frequently hearts removed from the bodies of animals kept on beating outside, which they would not have done had the stimulus been supplied by the nervous system alone. He found that extracts from a portion of the heart of the frog would act on the stilled heart removed from another frog, causing it to contract again. The extract was able to cause this reaction even in hearts that had been lying still in glass dishes for as much as three and one-half days.—*Science Supplement*, January 21, 1927.

An Address
ON
POST-NATAL CARE

By B. P. Watson, M.D. (Ed.), F.R.C.S. (Ed.), F.A.C.S.

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THE medical profession, and to a considerable extent the public, are now alive to the necessity for prenatal supervision. There can be little doubt that in a few years the results of this will be seen in a diminution in the maternity death rate from such conditions as hyperemesis, eclampsia and sepsis.

In all civilized countries the number of women dying from the complications of pregnancy and labour is known from year to year, but we have no means of ascertaining the number whose health is impaired as the result of the reproductive process. We know that it must be large from the records of the gynæcological services of our hospitals, and from our individual observations of parous women.

Responsibility for an obstetric patient does not end with the birth of the child and the termination of the clinical puerperium, but extends throughout her life. A realization of this brings home to us the necessity for a more adequate post-natal supervision, than has hitherto been generally given.

In the pre-natal period a regular routine is followed including the periodic examination of the urine and recording of blood pressure, the measurement of the pelvis, the ascertaining of the presentation and position of the child and the correction of these when abnormal, the estimation of the relative size of head to pelvis near term and the general supervision of health. No such precise routine is generally followed in the post-partum period, and as a result conditions are often overlooked which later result in chronic ill health and even death.

Time will not permit of a consideration of all the details of post-partum care from the time of the completion of the labour but attention will be directed to the prevention of certain common disabilities. We shall deal first of all with what we may call the normal case in which there has been thorough pre-natal care, a skilled conduct of labour, and the immediate repair of all injuries. Such a patient gives us little anxiety in the clinical puerperium and yet without proper guidance she may later suffer severe disability.

We are careful to impress on our patients that during pregnancy they must have a sufficient amount of exercise and open air if they are to come to labour in good physical condition. The same emphasis is not put on physical fitness as a necessity in the post-natal months. The abdominal muscles are overstretched during the latter part of pregnancy and are tired out at the end of the second stage of labour. During the patient's stay in bed these muscles are apt to become soft and flabby so that when she gets up at the end of ten days or two weeks they are easily tired and afford inadequate support. If the patient has the whole care of her baby in addition to household and social duties the muscles have little chance of recovery and remain in a permanently relaxed condition. The result is that she takes less and less exercise; the abdominal walls sag; there is a tendency to a general visceroptosis and prolapse of all the abdominal and pelvic organs. The latter may be so slight as to be undetectable on ordinary physical examination, yet those patients form a large proportion of those consulting us for chronic backache and lower abdominal pain. In some of them a slight prolapse or even a marked retroflexion of the uterus may be found, but it is a relaxed abdominal wall rather than the uterine displacement which is the cause of their symptoms. Such patients can be relieved by the wearing of

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a proper abdominal support or corset, but they are frequently not seen until this is merely a palliative rather than a curative treatment.

These conditions can be prevented in the great majority of cases during the clinical puerperium, by which I mean the two or three weeks following delivery. Whilst the patient is still in bed regular muscular exercises should be carried out. If in addition massage of the abdomen and legs can be given the result is so much the better. The patient should be encouraged to move about freely in bed and should be permitted and encouraged to sit up from the third day onwards. From this time regular, graduated exercises should be carried out consisting in the alternate flexion and extension of the thigh on the abdomen, first one leg, then the other, then both together, and after the fifth day, the raising of the body from the bed with the legs extended; twisting movements of the body whilst she lies flat on her back are also good. There can be no question that when such exercises are regularly carried out the muscles keep their tone so that when the patient gets out of bed she moves about more freely and with less distress than the patient who has not had them. Such exercises also help the involution of the uterus by accelerating the pelvic circulation and this in turn minimizes the danger of thrombosis and embolus. They also help to restore the tone of the pelvic floor muscles so that when the patient gets out of bed the still heavy uterus is better supported from below and has less tendency to prolapse or retrovert.

The length of time a patient ought to stay in bed varies in different cases; the average time should probably be about ten days, with a maximum of two weeks in the normal cases of which we have been speaking.

When the patient begins to move about, if she notices a tendency to sagging of the abdominal wall and to backache, she ought to be instructed to continue the exercises for the abdominal muscles, and in addition she may require a temporary supporting corset. The time during which permanent impairment of the abdominal walls establishes itself is in the first two or three months following confinement. The patient is then apt, with the care of the child on her hands, to become anæmic and flabby. It is most important that her daily life be supervised during this time. She is, or ought to be nursing her baby and we must see to it that this is not placing too great a strain upon her. It is now generally recognized that four-hourly feedings are best for the infant of average weight and that five feedings a day are sufficient. In my experience every infant of average weight can be trained from the first two or three days of its life to sleep through the night from 10 p.m. to 6 a.m. without feeding. Such infants gain just as much and are as sturdy as those who have six feedings in the 24 hours. The elimination of the night feeding makes a great difference to the nursing mother; she can have almost eight hours of unbroken sleep and this means much to the young primipara. When the patient remains anæmic and tired it is well to begin to accustom the child to artificial feeding so that this may be substituted once a day, enabling the mother to get more fresh air and outside distractions than would otherwise be possible. I believe that we do not always recognize what a great strain, often with permanent bad results, there is on the young primipara who before and during her pregnancy was active, athletic, and carefree, and who now has restriction of liberty, insufficient sleep, and added responsibility. Such a patient requires advice and direction. The gradual disappearance of the old-fashioned general practitioner is to be regretted, if for no other reason than that this aspect of his work is so often neglected.

I have dwelt at some length on this part of post-natal care because as gynæcologists we see so many women suffering from chronic backache and lower abdominal pain with general impairment of health, loss of vigour and of the joy of life, who date their disability from their first pregnancy and labour and in whom the chief lesion found is a relaxed abdominal wall and enteroptosis.

Uterine Displacements

Unquestionably the most common lesion following an otherwise normal pregnancy, labour, and puerperium is a retroversion or a retroflexion of the uterus with or without descent. We all know that the vast majority of retroflexions of the uterus follow childbirth, but I do not think it is generally recognized how frequently they occur. I took at random

the histories of 100 consecutive obstetrical cases in the Sloane Hospital for Women, New York, and from the follow-up records of these found that 33 had a retroversion or retroflexion of the uterus when examined six weeks or later after delivery. In only three of those cases was the retroflexion noted at the routine discharge examination made on the tenth day following delivery. Routine post-partum pelvic examination should be an absolute rule in all cases: firstly, to make sure that the repair of any pelvic floor laceration is complete; secondly, to ascertain the condition of the cervix; thirdly, to determine the involution of the uterus; and fourthly, to determine the position of the uterus. As a rule the uterus is not sufficiently involuted on the tenth day of the puerperium to have again become a pelvic organ. In some cases the fundus may already be below the pelvic brim at this time but, as a rule, it is the twelfth or fourteenth day before it is well below the promontory of the sacrum. It is at this time that retroversion or retroflexion is likely to occur. With the strain on our hospital accommodation patients are sometimes discharged on the twelfth or thirteenth day. Such patients should be examined on the day of discharge for it may be found that a uterus, which on the tenth day was in good position, has by this time become retroverted. A uterus in normal position on the fourteenth day may be found retroverted on the twenty-first day. It should, therefore, be a rule that another pelvic examination be made at this time.

When such retroversion is detected the uterus should be at once replaced by bimanual manipulation. This is a very easy procedure. By giving the patient instructions not to allow the bladder to become over-distended and to assume the knee-chest position two or three times a day such a replaced uterus may remain in good anteverted position and give no further trouble. In many instances, in spite of these precautions, the retroversion will recur and remain permanent. For that reason it is best in such cases after replacement to insert a pessary, using the ordinary Smith Hodge pattern. The pessary must be of the proper size. It is a great mistake to use a large one, and a very small one will not hold the uterus. A number 2 or 3 is usually sufficient. There is no difficulty in introducing such an instrument even when a pelvic floor repair has been done, it causes the patient no discomfort and does not, as often supposed, subject the patient to any risk from septic infection of the uterus. Every puerperal uterus is invaded with organisms from the fourth day onwards and, if ordinary aseptic precautions are used, the introduction of a pessary has no prejudicial effects. The patient should be examined in twenty-four or forty-eight hours to make sure that the pessary is causing no discomfort and is maintaining the uterus in good position. It should not be so large as to distend the vagina or cause any pressure on the vaginal walls or cervix. It should not be so small as to allow the uterus to retroflex over it. The pessary must be worn till the sixth or eighth week of the puerperium. Involution of the uterus and its supporting ligaments is completed six weeks after delivery. By maintaining the uterus in its normal position during this time, these supports, more especially the transversus coli ligaments, have a chance to involute properly. With a failure to recognize and treat the retroflexion in this way a great strain is put upon the uterine supports by the weight of the organ dragging backwards. A tissue under strain will not involute perfectly, so these supports never regain their former tone and the result is a permanent retroflexion, very often accompanied by a descent of the uterus in the pelvis. The correction of the displacement and the insertion of a pessary six weeks post-partum is usually a mere palliative and will not effect a cure. If this examination for, and correction of, retroflexions were systematically carried out at the end of the second or third week of the puerperium retroversion, retroflexion, and prolapse of the uterus would be much less frequent gynæcological conditions than they are to-day.

It should also be recognized that if a patient with a retroflexed uterus becomes pregnant there is a chance of effecting a cure in the subsequent puerperium by the use of a pessary in this way. A pessary under these circumstances is more than a palliative, it is a curative agent.

There is a clinical symptom of retroversion or retroflexion of the uterus in the puerperium

XUM

which is not generally recognized, namely, a continuance of the red lochial discharge beyond the usual time. It has for long been my teaching that a persistence of red lochial discharge beyond the second week of the puerperium should always call for a careful pelvic examination. In a very large number of such cases the uterus will be found to be retroverted. When it is replaced and maintained in position, the red lochia disappears at once. This symptom is one which should never be disregarded or attributed to a subinvolution or possible retention of membrane.

When a retroversion or retroflexion of the uterus has been permitted to occur and remains permanent the after history of the patient varies considerably. In many instances she is as fit and well as ever she was. In such cases there is good pelvic floor support, there is no descent of the uterus and the abdominal walls are of good tone. Such cases call for no treatment. Many of them are congenital retroflexions and were, therefore, present before pregnancy.

In others there is good pelvic floor support, no descent of the uterus but a relaxed abdominal wall. Any symptoms such as lower abdominal pain and backache are due to the latter. The proper treatment of such is by exercises and the fitting of a suitable abdominal belt or corset.

If along with retroflexion there is descent of the uterus with relaxation of the pelvic floor, symptoms are usually pronounced and operative treatment will give relief, provided it is carried out in the proper way and includes a pelvic floor repair as well as some form of uterine suspension. It must never be forgotten in the after treatment of such cases that the lax abdominal wall remains. A good anatomical result so far as the pelvic organs are concerned may be obtained and yet both patient and surgeon be disappointed by a persistence of pain and ache. Such patients require an abdominal support.

In young women who have the prospect of future pregnancies, palliative treatment with a pessary rather than an operation is in order, for there is always the hope that, provided the pelvic floor is not too greatly damaged, the use of the pessary in the subsequent puerperium may be curative.

Cervical Lacerations

It is the experience of most obstetricians and gynæcologists that when the first stage of labour is allowed to complete itself naturally, without artificial interference of any kind, no deep laceration of the cervix results. The two circumstances under which deep tears of the cervix occur are: (1) delivery of the child by forceps or version before complete dilatation; and (2) the very precipitate, tumultuous labour, lasting it may be only two or three hours, in the primipara. Under both of those circumstances the condition of the cervix should be ascertained immediately after delivery and if lacerations are found they should be repaired. In the normal case most of us agree that a digital or visual examination of the cervix is not called for. In a certain number of these cases examination before or after the sixth week of the puerperium will show a deeper tear than normal with some eversion and catarrh. Such patients generally have a leucorrheal discharge. If the tear is a deep one simple repair should be done as soon as possible. In those cases where the laceration is not deep, vaginal douching with sodium bicarbonate, one teaspoonful to a pint, followed by bichloride of mercury, one in five thousand, frequently clears up the condition. If it does not the occasional application of nitrate of silver, sixty grains to the ounce and the continuance of douching effects a cure, or the thermo cautery may be used. The timely treatment of such catarrhal conditions of the cervix is important in the prevention of subsequent gross pathology, including cancer.

To sum up, the routine post-natal care after every labour should include:—

1. Attention to the restoration of muscle tone by graduated exercises begun after the third day of the puerperium and continued for as long as necessary. Special attention to be paid to the abdominal muscles.
2. A watch on the involution of the uterus, and a pelvic examination, as soon as the uterus has again become a pelvic organ, to determine its position.
3. Pelvic examination at the end of the third week for the detection of a retroflexion occurring late, and to determine the state of the cervix.
4. If the uterus is found to be retroverted immediate replacement and its retention by a pessary which is to be worn till the end of the sixth week.
5. Regulation of the nursing of the child, having regard to the mother's health as well as that of the child.
6. Insistence on a proper amount of out-door exercise and leisure.

Where complications have been present during the pregnancy additional precautions must be taken. Reference will be made to only two of these, namely, cardiac lesions and the pregnancy toxæmias.

Cardiac Lesions

Many patients with definite valvular and myocardial lesions go through pregnancy and labour with apparent ease. There seems to be little doubt, however, that though no untoward symptoms immediately appear, a permanent impairment of function results in a number of them. All such require careful supervision for some months after labour.

When a breakdown in compensation occurs during pregnancy treatment must be instituted at once, and the method of delivery carefully considered. In some, Cæsarean section followed by sterilization is undoubtedly the best. In others, especially multiparæ who have had previous easy labours, this treatment may not be necessary, but such patients should be warned against the dangers of subsequent pregnancies, and be given advice as to how to prevent them. Their mode of life must be carefully regulated for some time, and it must be impressed upon them that the need for care does not cease with a disappearance of symptoms. The late Sir James Mackenzie was much impressed by the fact that pregnancy and labour have a prejudicial effect on cardiac lesions even when these are symptomless at the time. There is, therefore, need for a careful watch on all such in the post-partum period.

Pregnancy Toxæmias

It used to be the common text-book teaching that eclamptic toxæmia was a condition which cleared up very quickly after the pregnancy was terminated, and that it left no after effects. This belief was founded on the rapid diminution in the quantity of albumen in the urine and, very often, its complete disappearance within a few days. With a more thorough and prolonged follow-up of these eclamptic and other pregnancy toxæmia cases our views have been profoundly modified, and we now realize that many of these patients suffer permanent ill effects and require very careful watching and treatment in the post-partum period, and indeed for the rest of their lives.

I would call attention to a recent paper by Dr. W. W. Herrick and Dr. Jean Corwin, published in abstract in the February, 1927, Bulletin of the New York Academy of Medicine. They hold that "the late toxæmias of pregnancy represent failures of a defective maternal cardio-vascular-renal system to adapt itself to the strain of child bearing." They classify these toxæmias as:

1. Acute convulsive toxæmias (eclampsia).
2. Nephritic toxæmias marked by long continued albuminuria, or relative nitrogen retention; and
3. Hypertensive toxæmias, characterized by hypertension without marked albuminuria.

In a follow-up of 291 cases, coming under these categories, in the Sloane Hospital for Women, they find that "hypertension persisting for months and years was present in one-third of the cases of eclampsia, one-half of the cases of nephritic toxæmia, and two-fifths of the cases of hypertensive toxæmia. One-half of the nephritic group showed marked albuminuria in the follow-up period."

Bunzel in a previous study in the same hospital (*Am. J. Obst. & Gynæc.*, vii, 686) found in a series of 133 cases of late pregnancy toxæmia, where a complete follow-up had been possible that 37.6 per cent showed persistent hypertension and that 39.8 per cent had albuminuria of some degree; 54.2 per cent showed renal insufficiency by the phenophthalein test; and of those with retinal changes during their pregnancy 31 per cent had persistence of them. These findings collectively gave a percentage of 41.4 per cent with signs of permanent cardio-vascular-renal disturbances following on pregnancy toxæmia. Other observers have published very similar results.

It is unnecessary to enter into any discussion as to what these late pregnancy toxæmias really are; whether there is a definite entity called eclampsia, which differs etiologically from the other forms of toxæmia, or whether it is merely a late stage of the latter. For our present purpose it is sufficient to realize that all are liable to be followed by permanent structural and functional changes, which may materially affect the health and life of the patient.

Such patients require very close supervision and treatment by one skilled in such cases. Most of us, as obstetricians, are not capable of undertaking this and should have the co-operation of the internist. This is especially necessary when the question of future child-bearing arises. We can no longer accept the old text-book statement that the patient who

has had eclampsia in one pregnancy has only the general average liability to it in a subsequent one. Many of them do go through future pregnancies without convulsions, but the majority show some signs of toxæmia. Thus Herrick and Corwin found that in nine out of thirteen such cases observed there was marked toxæmia in the following pregnancy. Young (*Edin. M. J.*, 1927, xxxiv, 64) found that out of 47 cases of eclampsia six had had convulsions in previous pregnancies.

In the subsequent care of all toxæmia patients, the question of further child-bearing is one of the greatest difficulty. Where there are permanent after-effects on the cardio-vascular-renal system, there is not only the danger of further damage if the patient again becomes pregnant, but there is a possibility that she will undertake this risk without the compensation of bearing a living child. Herrick and Corwin in the Sloane series found that the fœtal mortality in pregnancies following on eclampsia was 30 per cent, following nephritic toxæmia 47 per cent, and in the cases following hypertensive toxæmia 15 per cent.

It is thus evident that every patient who has exhibited any of the signs and symptoms of toxæmia during pregnancy requires to have a careful watch kept upon her in the immediate and remote post-partum period, and that the advice we give her with regard to future child-bearing must be based upon the known facts, and upon a careful individual study of her case. If she becomes pregnant again the most careful ante-partum care is necessary, if her health is to be conserved, and the chances of her bearing a living child increased. At any time the latter may have to be sacrificed for the former.

In these, and indeed in all cases, post-partum care merges into ante-partum. Both are required if the woman's burden in the perpetuation of the race is to be made as light as possible.

Trachoma Among Indians of Southwest.—William Campbell Posey, Philadelphia, believes that the compulsory education program for children, admirable and necessary as it is, has been the chief cause of the increase of trachoma among the Indians in recent years. It has been the bringing together in close contact in the schools of children with the disease, who under the old system of tribal life led a more or less isolated existence and consequently were less likely to give the disease to others. The extermination of trachoma among the adult Indians, particularly those of the nomadic tribes, presents a very difficult problem. Added to the conditions of life, which are all unfavourable, is the problem of the "medicine man" and the religion of the Indians. It will need the impress derived from the education of several generations of children before the adult Indian will be ready to receive and adopt the standards of living of the white citizens who surround him. In the meantime much can be done to supplement the training which their children are receiving by educational efforts directed to the adults themselves. This is difficult when dealing with nomadic tribes unfamiliar with our language, and can best be done by the establishment of community centres, similar to those the government has already instituted in some places at trading posts and schools, which inviting conditions may beguile the older Indians to visit and there receive instruction through the medium of moving pictures and talks in their own language about better modes of life. Indian girls who have been trained as nurses, or other graduates of the schools who may show an aptitude for such service and who may impart to their elders some of the knowledge they have acquired in the schools, should be chosen. More efficacious than traveling ophthalmologists and so-called clean-up campaigns would be the establishment of a number of hospitals for the treatment of eye diseases. These should be easy of access and should have ample provision for indoor treatment. A first-class general hospital with modern laboratory and roentgen-ray equipment is badly needed in the Indian Service of the Southwest. The co-operation of state health officers and of all organizations interested in the welfare of the Indian will be necessary to win the adult Indian to more hygienic ways of life. Incidentally, as the Indian rises to the white man's level in this respect, the government and all other agencies interested in Indian welfare will need to exercise increased vigilance to protect the neophyte from some of the evils of white companionship. The day will come, however, when the Indians, so far as manner of living is concerned, will be indistinguishable from the white people.—*J. Am. M. Ass.*, May 21, 1927.

An Address
ON
THE RELATIONSHIP BETWEEN SCARLET FEVER AND CHRONIC NEPHRITIS

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As a student the detail that impressed me more than anything else about scarlet fever was the danger of acute nephritis occurring during the attack, with the possibility of chronic kidney trouble hanging like a sword of Damocles over the victim for the remainder of his existence. This was pointed out to us whenever the subject of chronic nephritis was considered and was emphasized by all the leading textbooks, both in medicine and pathology.

Osler in his *Practice of Medicine*, writing of scarlet fever declares that the renal inflammatory changes are the most important that occur, and states that these occur in from 10 to 20 per cent of all those attacked, and that while recovery may take place, not infrequently a chronic interstitial nephritis follows. Further, he affirms of chronic parenchymatous nephritis that it is met with most commonly in young adults and by no means infrequently in children as a sequel of scarlet fever nephritis. Holt also stresses the importance of scarlet fever as an etiological factor, and states that while the frequency of nephritis as a sequel of scarlet fever varies much in different epidemics, the average is from 6 to 10 per cent; and again, "chronic nephritis is most frequently seen as a sequel of the acute nephritis of scarlet fever." The attitude of those who have made a special study of scarlet fever affords a striking contrast to these pessimistic statements. McCallum writing in Osler's *System* declares that a chronic disease of the kidneys is not an infrequent sequel, but is not nearly so common as is generally supposed. In an analysis of 5,000 cases of scarlet fever chronic nephritis followed only in 20 instances.

C. E. Ker summarizes the question thus: "Even a trace of albumin in the urine must be taken seriously, especially if it is accompanied with vomiting or any suggestion of puffiness of the face. I have seen two cases, treated from the moment of their first symptoms, die within 36 hours in uræmic convulsions. Such occurrences are fortunately rare, but their possibility must never be forgotten. Nevertheless, the outlook as regards nephritis is, as a rule, extremely good, and the chances of the albuminuria becoming chronic, especially in children, are exceedingly remote."

Mathias Nicoll in Nelson's *System* uses the figures of the Metropolitan Asylums Board of London in which out of 63,085 scarlet fever cases, 1,889 developed acute nephritis (2.9 per cent). He considers that the subsequent course of the disease depends largely on the treatment administered, and that if the kidneys are made to resume their function, recovery is apparently complete within a short time, although he states that statistical evidence later in life would appear to indicate that the patient is more susceptible than the average person to acute and chronic lesions of the kidney. This statistical evidence, here rather vaguely referred to, I have been unable to discover.

The views of the pathologists vary from that of McCallum at the conservative end to that of Duval at the other extreme. McCallum's view is that, "although the kidney may be extensively scarred, in many cases complete recovery from all these injuries occurs, and if there is an opportunity to examine the kidney of such a person much later in life, it is probable that only isolated scars may be found as the remains of the early injury. In other words, it is by no means inevitable that the occurrence of an acute scarlatinal nephritis should result in the production of a progressive chronic diffuse

nephritis. The contrary is rather more probable."

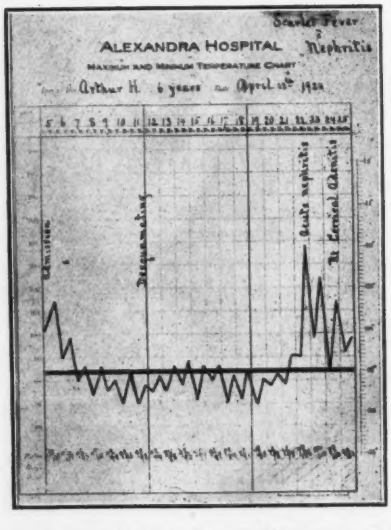
Duval's teaching is entirely at variance with our clinical experience. In a recently published article on the significant pathology of scarlet fever he writes: "The renal injury is not only a constant accompaniment, occurring as it does in the mild as well as the severe forms of scarlatina, but it affects more especially the glomeruli, although impairment of kidney function may during the infection be relatively little and be of no clinical significance. Structural changes are in consequence occasioned, which may result later in permanent disability of the organs. Furthermore, the wrecking of renal function during the active stage of infection is more often the cause of mortality than is the pneumonia or myocardial degeneration. Death from nephritis occurs as a complication and not infrequently in what the physician regards as the post-scarlatinal period. It is my opinion that the kidney lesion in scarlatina is the essential pathology of the disease. Pertinent to the subject is the fact that in cases of scarlet fever, even in mild forms, there is a concomitant parenchymatous nephritis, which presents pathological features that justify signalling it out from other acute nephritides. The great probability that the nephritis of scarlet fever is one of the forerunners of that entity known as Bright's disease makes it all the more important from a therapeutic aspect. In scarlatinal nephritis, unlike other parenchymatous nephritides, there is no regeneration of tubules because of the previous destruction of the capillary tufts. This point I especially desire to stress since it explains the occurrence of the chronic diffuse nephritis that follows months or years afterwards, and its relationship to the previous scarlatinal nephritis."

Having had the privilege of studying the cases of scarlet fever at the Alexandra Hospital for many years, I have been much impressed with the lack of clinical evidence to support what we have always taught and been taught. For that reason this investigation was undertaken.

On the whole, the nephritis in scarlet fever in Montreal during the past 20 years has been infrequent and mild, and from what we have seen, it does not seem rational to consider it a toxic nephritis due to the specific toxins of scarlet fever. In this it is in distinct contrast to the nephritis of *diphtheria,* in which the nephritis is nearly always proportionate to the toxæmia and can be fairly well predicted when the patient is admitted. In proof of this, we have had 242 cases of nephritis among 5,142 admissions to the diphtheria ward (4.7 per cent). These cases were almost invariably brought in with the characteristic evidences of marked toxæmia: extreme pallor, extensive membrane and marked enlargement of the cervical glands, and this was followed within a few days by much albuminuria with an abundance of casts.

In scarlet fever, on the other hand, one cannot predict which cases will develop nephritis; indeed, more often than not, it is the mild or unrecognized cases which does so. Again it usually develops later on after the toxæmia has subsided, and with a very typical syndrome of sore throat, enlarged cervical glands and a rise of temperature to 101° or 102,° associated with some hours of anuria before the typical smoky or bloody urine appears. Chart 1, taken from one of our most recent cases will serve to illustrate what I wish to emphasize.

CHART I



It may be urged that this syndrome is evidence of a renewed toxæmia, and that the patient is in reality suffering from a relapse, but the true features of a relapse are absent. In true relapses the kidney does not ordinarily suffer.

We are of the opinion that there is a distinct

relationship between the sore throat and the kidney lesion, and that both of them are in all probability due to a streptococcus; this, however, we believe to be a very different factor from the toxin of scarlet fever. The objection may be raised that we have not been strict enough in our classification, and that the personal equation has been an important factor. We can only affirm that the rules laid down by the late John McCrae when in charge of the wards are still adhered to, and we cannot do better than quote from his masterly study of the first 850 cases of scarlet fever admitted to the Alexandra Hospital.*

"The routine procedure upon which the following figures are based is to examine the urine daily during the disease and twice a week during convalescence. Where renal disease exists the examinations are made more frequently. Fifty-five per cent of the cases showed nothing abnormal at any time; the forty-five per cent which showed a departure from the normal will be classified. Dealing with 784 cases, a febrile albuminuria, that is, transient, and occurring during the course of the fever, was found 126 times, or in 16 per cent. This is much lower than the figures usually stated for its occurrence. In 20 other cases a trifling change such as the microscopic finding of blood without other serious change, permits these cases to be put aside. No case showing casts was included in these figures. After the fever had subsided, 72 cases showed albuminuria without casts and only on a few occasions and always in minute quantity; 43 others showed it in greater quantity, yet always in quantity that could be called moderate, and always without casts. Thus, 261 cases may be safely put aside as not being cases of nephritis, leaving out of 784, only 94 in which albuminuria and casts were present, and which merit our careful examination. The following estimates have been made in the most conservative manner, and represent the evidence of nephritis in its worst possible light:—

Cases of brief albuminuria with casts during febrile period only	8
Cases in which nephritis occurred with physical signs, or with very definite urinary signs (of these five had suffered from a previous nephritis).	46
Cases in which signs of a very moderate nephritis developed	19
Cases in which signs of a slight nephritis were found	21

The last class would probably be discarded by a medical jury, and the previous one would doubtless divide opinions. Still, to avoid partizanship, we count that there were 65 cases of nephritis, or, excluding the five who had suffered previously, 60 cases of nephritis due to scarlet fever, that is, 12.5 per cent. Most of the cases got well before their discharge from the hospital. There were no deaths from nephritis, save one case, which was admitted on the twenty-third day of the disease with convulsions. There have been no other nephritic convulsions in the hospital since its foundation. On a few occasions, puffiness of the face has been noticed without any urinary change and it has been a matter of comment how often a sudden rise of temperature has been found to be due to the appearance of albuminuria."

With the principles here laid down as our guide, our experience at the Alexandra Hospital either has been most unusual, or the type of disease must have changed. What little nephritis we have seen, has been of a mild nature and has cleared up completely in almost every instance so far as clinical evidence goes, in two to three weeks.

Including Dr. McCrae's cases there have been admitted from the opening of the hospital in 1906 to the end of 1926, 10,265 cases of scarlet fever, of which 231 cases have shown evidence of acute nephritis, (2.2 per cent). Of these 231 cases, only six have died because of their nephritis; a true nephritic death. Surely this is a striking contrast to our ordinary teaching on the subject of the immediate prognosis. Along with these there may be considered the series of 63,085 cases of scarlet fever from the Metropolitan Asylums Board Area, London, of whom 1,889 developed acute nephritis (2.9 per cent).

As to the ultimate prognosis: we do not contend that those cases who have had nephritis during their attack of scarlet fever are not, in many instances, permanently damaged in their kidneys; but, on the other hand, we do not think it fair to say on any evidence yet available, that those who have had a mild attack lasting about ten days, clearing up completely and showing no evidence for a long time subsequently, are going to exhibit chronic nephritis years afterwards as a result. Even if we do admit that such is the case, of what value is the history of an attack of scarlet fever in childhood, when received from a chronic nephritic in middle life, unless that history is accompanied by one of nephritis?

Not being willing to admit with Duval that practically every case of scarlet fever has its kidneys damaged, we have sought information to try and find an answer to this problem. For this purpose, 1,500 consecutive case histories of the medical service of the Montreal General Hospital have been studied with the following results:—

Cases giving a history of scarlet fever, but showing no signs of chronic nephritis while in hospital	111
Cases showing evidence of chronic nephritis (albumen and casts on more than one occasion excluding that in acute febrile conditions) but with no history of scarlet fever	82
Cases giving a history of scarlet fever and showing signs of chronic nephritis	10

From another study of chronic nephritis from the records of the Montreal General Hospital, not including any of the previously considered

* *Can. Med. Assoc. Journal*, 1911, April, 293.

cases, Dr. Rabinowitch obtained valuable confirmatory evidence.

Out of 200 consecutive cases of chronic nephritis, he found a history of scarlet fever in 19, and in a later group of 250, a history of scarlet fever was obtained in 27; a total of 46 in 450 nephritics (roughly 10 per cent). Again it was felt that a group of adults on whose kidneys more or less strain was thrown by pregnancy would furnish valuable information. For this purpose 1,500 consecutive case histories from the public service of the Montreal Maternity Hospital were examined. These are of special value for, reflecting our previous teaching, the ante-natal history chart inquires particularly into the question of nephritis and scarlet fever. Moreover, these patients for the most part have been observed over a considerable interval of time. The following results were obtained:—

Patients giving a history of scarlet fever but no evidence of nephritis (or severe albuminuria) during pregnancy or puerperium....	182
Patients showing evidence of nephritis or severe albuminuria during pregnancy or puerperium, but with no history of scarlet fever	30
Patients showing evidence of nephritis and giving a history of scarlet fever.....	10

Summarizing these statistics:

General Hospital Group—1,500 consecutive cases:

History of scarlet fever in.....	121
" of nephritis in.....	92
" of both in.....	10

Dividing the cases up into 3 groups of 500 (consecutive)

	Scarlet Fever	*Nephritis*	*Scarlet Fever and Nephritis*
1— 500.....	64	36	4
501—1,000.....	19	22	2
1,000—1,500.....	34	34	4

Maternity Hospital Group—1,500 consecutive cases:

History of scarlet fever in.....	192
" of nephritis in.....	40
" of both in.....	10

Again dividing these into three groups of 500 (consecutive)

	Scarlet Fever	*Nephritis*	*Scarlet Fever and Nephritis*
1— 500.....	57	8	4
501—1,000.....	54	13	5
1,001—1,500.....	71	9	1

Considering that in taking case histories the internes have always been taught to inquire especially as to scarlet fever whenever the suspicion of nephritis was entertained, we feel that these statistics are very instructive and go to support our contention that scarlet fever is an incidental rather than an especial factor in producing nephritis later in life.

In reviewing the facts here presented, we feel justified in concluding:—

1. That the incidence of acute nephritis in scarlet fever in Montreal during the past 20 years, as well as in the Metropolitan Asylums Board area of London, England, has not been anything like what it is usually considered to be and is in fact less than 3 per cent.

2. That in a study of over 10,000 cases of scarlet fever at the Alexandra Hospital it has become evident that of the very few who developed nephritis, almost all responded rapidly when properly treated from the onset, and left the hospital without any clinical evidence of kidney involvement.

3. That a statistical study* based on the records of the Montreal General Hospital and Montreal Maternity Hospital shows that the incidence of chronic nephritis in cases with a history of scarlet fever is little greater than is in accord with the law of averages. This has been proved by applying calculations based upon the probability of concurrent events. On the other hand it is strikingly evident that a history of scarlet fever is very frequent with no evidence of kidney damage many years later.

4. That in view of the above facts, we should reconsider our position in teaching that scarlet fever is the chief factor in the production of nephritis in later life.

* I am indebted to Dr. I. M. Rabinowitch for the above clear and convincing treatment of these statistics on mathematical principles.

Delayed Resolution.—On March 1st Dr. Mair read a paper, at the James Mackenzie Institute, on delayed resolution in pneumonia. He distinguished an alveolar and an interstitial type of lesion, the former being characteristic of unresolved and recurrent pneumonia, while the latter was represented by pulmonary fibrosis. The symptoms in children were somewhat different from those found in the adult, the cardinal symptom being paroxysmal cough, often associated with cyanotic attacks. The difficulty of recognizing cases of interstitial fibrous pneumonia was emphasized. Symptoms might be almost lacking in this disease, beyond slight cough and some loss of efficiency.

An Address
ON
ASTHMA: ITS DIAGNOSIS AND TREATMENT*

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Part II.†

Bronchitic and Cardiac Asthma

More than 50 per cent of all asthmatics fall into the group classified as bronchitic asthma. Although this group is well recognized, one finds very little concerning it in the literature. Almost all articles on asthma in the past ten years refer at length to protein asthma and pass over the bronchitic type in a very few words. The reason for this probably is that less is known about its etiology and less success has been attained in its treatment. The condition is sharply differentiated from protein asthma, not only by the absence of hyper-sensitivity (or allergy) with respect to any proteins, but also by the history of the course of the disease. In these cases it will almost invariably be found that a history of chronic bronchitis precedes the onset of the asthma. Often the bronchitis has been initiated by an attack of influenza, or a pneumonia which has not resolved in the usual satisfactory manner. It is true that one occasionally meets a case in which there is no demonstrable bronchitis, and all that can be found on examination is an ethmoiditis. It is this type which has been classified by some observers as a reflex asthma. I do not wish to deny its existence, but will merely point out that thorough examination almost always reveals a secondary infection in the lower respiratory tract, and it is therefore debatable as to whether they do not always have some infection in the bronchial tree even though it cannot be demonstrated.

Attention should be called to the fact that hyper-sensitivity to proteins may, in children, manifest itself in a condition almost indistinguishable from bronchitis. These cases during later child life and youth begin to have attacks more typical of asthma and a true diagnosis becomes clinically possible. Such cases should not, of course, be classified amongst the bronchitic types at all. Nevertheless it is not inconceivable that true protein asthma may be ushered in by a long history of bronchitis as in one of my cases. A male age 23, had had attacks of bronchitis ever since four years of age. His first attack of asthma occurred during the War when he was detailed for duty with the mounted troops. He found that he could not be near horses without suffering severely from asthma. Cutaneous tests revealed a violent reaction to horse dander, with minor reactions to cat and dog hair. The question arises in this case as to whether the symptoms in childhood were evidence of a real bronchitis, or a manifestation of allergy. It is possible that had one seen the case during an attack of the so-called bronchitis a correct diagnosis might have suggested itself, but I doubt whether one could arrive at a real solution of the problem in this patient without the aid of protein tests.

In the case of asthma secondary to chronic bronchitis, physical examination between the attacks of asthma reveals evidence of diffuse bronchial change, such as harsh vesicular breath sounds with prolonged expiratory murmur, and scattered rhonchi throughout the chest. In long-standing cases there are all the signs of chronic pulmonary emphysema. The sputum is usually mucoid with some yellow or greenish material indicating purulency; this evidence of pyogenic infection may only be present in the early stages of each attack of

* From the Department of Medicine, University of Toronto. Read before the Kingston and Frontenac Medical Society, Feb. 14, 1927.

† Part I, Protein Asthma, *Canad. M. Ass. J.*, June, 1926, xvii, 661.

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bronchitis, and during the asthmatic attacks the sputum may be clear and jelly-like as found in protein asthma.

Eventually there comes a time in the course of protein asthma when all the signs enumerated above are present between the attacks, so that physical examination as a means of differentiation is only of value in early cases. An appreciation of this point will avoid many mistaken diagnoses.

Having finally decided that a given case belongs to the group of bronchitic asthma the next step is to ascertain in turn the cause of the bronchitis, as the successful treatment of the asthma will depend almost entirely on the measures taken to eliminate the infection in the bronchial tree. The following table will assist in the search for the etiological factor in the bronchitis:—

CAUSES OF CHRONIC BRONCHITIS

1. Focal infection, particularly in the upper respiratory tract.
2. Protein or cardiac asthma.
3. Arteriosclerosis usually associated with emphysema.
4. Mitral stenosis or myocardial disease.
5. Occupation—dust, etc.
6. Climate.
7. Tumours or aneurism pressing upon a bronchus.
8. Bronchiectasis.
9. Increased susceptibility of the bronchial mucosa to infection.

It follows, therefore, that a thorough search must be made for one or more of the factors enumerated above. In connection with focal infection it is my experience that infection about the gingival margins and the tonsils or accessory nasal sinuses is of prime importance. Apical dental abscesses do not, in my opinion, have any direct bearing on the bronchitis or asthma, but of course may unfavourably influence the general health of the patient. The best criterion for condemning the tonsils is a history of recurring tonsillitis; next in importance to this are the evidences of chronic inflammation such as enlargement, excretion of fluid pus from the crypts on pressure, and the presence of enlarged lymphatic glands at the angles of the jaw. It is probable that accessory nasal sinus infection cannot be ruled out in some cases without the aid of x-ray plates. Protein or cardiac asthma may cause chronic bronchitis by reason of the long continued irritation of the spasm in the bronchial musculature with turgescence of the mucous membrane, which eventually must lower the resistance of the bronchial tree and allow infection to take place. Usually this infection does not occur until the patient has suffered from asthma for a number of months or years. Arteriosclerosis of the pulmonary vessels associated with pulmonary emphysema is believed to be responsible for the onset of bronchial infection by reason of the altered circulatory condition. The same is true of myocardial disease or mitral stenosis with chronic passive congestion of the lungs. Certain occupations, particularly those which expose the patient to irritating fumes, dusty atmospheres, wet or extremes of temperature are obviously liable to lead to bronchitis. The retained secretion and altered circulation of the bronchus distal to a tumour or aneurism pressing upon a bronchus usually result in localized infection. A bronchiectatic cavity serves constantly to re-infect the remainder of the bronchial tree, particularly on the same side. Finally in cases where all of the factors such as we have just considered can be shown to be absent, we are forced, in accounting for the presence of a chronic bronchitis to the conclusion that in some patients the infection is due merely to an increased susceptibility of the bronchial mucous membrane to infection. In other words we are dealing here with a primary bronchitis. There is some evidence, however, which suggests that even in these cases we must remember the possibility of a portal of entry for bacteria apart from the general bronchial tree. Irons[1] has suggested the tissues about the hila of the lungs as such a portal of entry. Of course this point, at least at present, is of academic interest only as such focus, or portal, can only be reached by bronchoscopy and direct treatment so far has not been found to be of much value.

CARDIAC ASTHMA

This type of asthma is not uncommon although its occurrence is much less frequent than the types just described. It occurs most frequently in individuals past fifty years of age, and nearly always in persons already known to be suffering from cardiac disease. The nature of the lesion in the heart is either a degenerative myocardial condition or a coronary sclerosis. Attention should be called

to the necessity for differentiating between cardiac asthma and cardiac dyspnœa. In the former condition the administration of adrenalin affords prompt relief, as in other types of asthma, whereas in the more common condition of cardiac dyspnœa adrenalin has no effect since there is no spasm of the bronchial musculature.

The diagnosis of cardiac asthma, therefore, rests upon the presence of bronchial spasm, the onset of which has occurred after middle age. Such patients must show either in the history or physical examination evidences of disease in the myocardium or cardiac vessels. It must also be demonstrated that the patient is not a subject of protein sensitization or chronic bronchitis.

Treatment

Since the line of treatment to be adopted in any given case of asthma depends so much upon the cause, I have purposely devoted much the larger part of this discussion to the methods of etiological diagnosis. Once the patient has been thoroughly investigated and the cause of his asthma ascertained the treatment suggests itself in most instances. The investigation requires time, and where the attack of asthma is actually in progress, one's attention must first be directed towards affording the patient temporary relief. An abundance of fresh air is important and this must be provided without allowing the sufferer to become chilled. Avoid unnecessary conversation as the effort of talking or other exertion on the part of the patient increases the respiratory distress. Adrenalin chloride (1-1,000) given hypodermically in a dose of from 5 to 6 minims, according to the size of the patient, will usually relieve the attack. Occasionally one will meet with a case in which adrenalin produces untoward symptoms, such as faintness, palpitation, tremor or even collapse. I have never heard of a fatal result, however, and in those individuals having slight symptoms I would not hesitate to use the drug when indicated. Atropine acts by paralyzing the vagus endings and in the few cases where adrenalin, which acts by stimulating the dilator fibres of the sympathetic, does not have the desired effect, or is contra-indicated for other reasons, atropine should be tried. Asthma powders, containing stramonium, belladonna, hyoscyamus or lobelia leaves mixed with potassium nitrite to assist burning, are used a great deal and many patients obtain marked relief by their use. They tend to irritate the bronchial mucosa, thereby exciting an attack of coughing, which seems to relieve the bronchial spasm to some extent. I feel that the use of asthma powders is justifiable where it is not practicable for the patient to have a hypodermic of adrenalin administered, but because of the irritating effect of the fumes, a bronchitis is apt to be set up or encouraged and thus harm as well as good may result.

Prevention of Recurrences

Attacks of asthma can only be prevented with certainty when the cause has been discovered and removed. In the case of those asthmatics sensitized to protein this is often easily accomplished. Where the offending protein is contained in the food, such article of diet should be omitted since attempts to desensitize these individuals must necessarily be laborious and time consuming and are not always successful. Prolonged abstinence, however, will often result in automatic desensitization. In cases where it is impossible to omit a food from the dietary the desensitization is accomplished by one of two methods. One is to feed the patient minute quantities of the offending food—quantities insufficient to cause a reaction. The amounts are gradually increased until the patient is able to take a reasonable serving without untoward effects. The other method has only been available recently, namely, the inoculation of the patient with graduated doses of protein solution, after the manner of hay fever treatment. These solutions have only recently been on the market and I have had no personal experience with their use. Both of these methods are time consuming and must be persisted in to obtain satisfactory results. In the case of animal emanations, avoidance of contact should be attempted; where this is impossible or insufficient, desensitization by inoculation with increasing doses of the offending protein will usually prove successful. In the writer's experience such active desensitization is most often necessary in the case of horse dander sensitivity, less frequently in cases sensitive to feathers. From what has just been said it is obvious that sensitivity to feathers and

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house dust is best treated by the removal of pillows, cushions and eiderdowns from the rooms and sometimes from all the living quarters of the house; and the most thorough house cleaning, so as to reduce dust to the absolute minimum. Bare floors are more easily kept free from dust than those covered by rugs or carpets; draperies should be eliminated as far as possible. In other words it is sometimes necessary to convert the patient's house, and particularly the patient's room, into a veritable hospital ward so far as furnishings are concerned. We have in the General Hospital at the present time an asthmatic who is sensitive to dust, who is now on her third admission. Her asthma leaves her almost immediately on reaching the hospital and she remains free. On returning to her own home her symptoms recur within a few hours. Cooke[2] describes the case of a girl living in a Y.W.C.A. dormitory whose sensitivity to dust was so great that the slightest laxity on the part of the chambermaid would result in an attack of asthma, and all that was necessary to relieve her was to remind the chambermaid of the importance of removing all dust from the room.

Pollen asthma is treated in the same manner as hay fever, namely, by inoculations with gradually increasing doses of the protein of the offending pollen *before* the season complained of. Such desensitization is not permanent, but must be repeated each year.

The treatment of the second type of case, the chronic bronchitic with asthma, must be directed towards relieving the bronchitis. Where focal infection in the upper respiratory tract exists, it must be treated, *i.e.* infected tonsils must be removed, pyorrhœa must be eliminated by treatment or removal of teeth where the process is very advanced. Infected antra must be washed out and infected sinuses drained. Often a polypoid condition of the mucous membrane may require attention. Vaccine treatment, using the organisms recovered from the patient's own secretions, either nasal or bronchial, has been a valuable aid in many cases. Occasionally the bacterial flora of the bronchial tree changes from time to time and the original vaccine may, under these circumstances, lose its efficacy. Thus it may be advantageous in refractory cases to make a new autogenous vaccine from time to time as required.

The treatment of cardiac asthma is essentially the treatment of the cardiac disease, although palliative measures which have been described in the other types may be applicable in these cases.

The drug treatment of asthma is assuming a place of less and less importance as our knowledge of causative factors increases. Nevertheless there is a real place for drug treatment, especially in refractory cases. Potassium or sodium iodide in doses of 10 grains 3 or 4 times a day undoubtedly does seem to lessen the frequency and severity of attacks in many cases. I know patients who are relieved quite satisfactorily by 5 or 10 grain doses of aspirin. The salicylates and iodides are the usual ingredients in the proprietary asthma remedies as shown by analyses carried out in various laboratories, and particularly in the laboratory of the American Medical Association. I think it is important for physicians to know the contents of these remedies, so as to inform their patients regarding these so-called cures, and in that way put a stop to the sale of ordinary drugs at exorbitant prices under the guise of patent asthma cures. Ephedrin has lately appeared on the market as a result of investigation,[3, 4, 5] carried out first in the Peking Union Medical College in China, and later on this continent, which goes to show that this drug possesses an adrenalin-like action in raising the blood pressure and relieving the smooth muscle spasm. Clinical results obtained by the use of this drug in asthma are now being reported, and in general go to show that in doses averaging 0.05 grams every 6 hours, the asthma is either completely relieved or lessened in many cases. My own experience tends to corroborate this view, but I have seen some patients who were entirely refractory to the drug.

In conclusion there are certain general measures which are applicable to any type of asthma. It is important for these patients to avoid dust of any kind, but particularly house dust. Irritating fumes and smoke often precipitate an attack and should be avoided. The dust from a feather pillow may be important, even where the patient does not prove to have a sensitization to feathers. The diet should be simple, and the meals limited in quantity. Better five small meals a day than three large

ones. Free catharsis is often followed by a marked alleviation of the distressing attacks and should be insisted upon. Elimination of waste products by skin and kidneys should also be encouraged. Climate is important only insofar as the presence or absence of the offending protein in the atmosphere is concerned, or in the bronchitic types, insofar as the atmospheric conditions irritate or allay the bronchial infection.

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TRYPARSAMIDE IN THE TREATMENT OF GENERAL PARESIS

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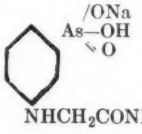
TRYPARSAMIDE has been used in the paresis clinic of the Ontario Hospital at London since January, 1925, when it was first offered for general sale. For the two previous years it had been supplied by the Rockefeller Institute to a few clinics for experimental work, and the first reports, those of Lorenz et al,[1] were of an exceedingly optimistic nature; unfortunately these results were not confirmed by others, although all clinics have reported that patients so treated improved in general health, and that a greater proportion showed clinical remissions than occurred with other forms of treatment.

The drug (the sodium salt of N-phenyl-glycine-amide-u-arsonic acid) has been described by Pearce and Brown[2] and its composition is shown in the following formula:



It has the advantages of being readily soluble in small quantities of water, gives a neutral reaction, can be administered either intravenously or intramuscularly without pain, and causes no local or general reaction as is sometimes seen in administering compounds of the arsphenamin group. It contains about the same percentage of arsenic as the other preparations; the usual dose is 3 grm.

It was first used in the treatment of trypanosomiasis, and later in neurosyphilis. It was found to have slight spirochæticidal activity, and was practically useless in the treatment of primary or secondary syphilis. In tertiary syphilis it appeared to exert a much better effect, because it fulfilled some of the conditions that arsphenamin could not fulfil, *viz.*, it was able to permeate the choroid plexus much more easily, and a greater amount of arsenic gained access to the cerebro-spinal fluid and was therefore available for direct attack on the spirochetes in the nerve tissue. In addition to this spirochæticidal activity, tryparsamide has a splendid general tonic effect, and causes a marked improvement in the general health with definite and often considerable increase in weight.

To compare one method of treatment with another often results in unsatisfactory conclusions. One is not dealing with identical material. One group of cases may be selected whereas the other group may not be. Not infrequently too, a group of cases may be more responsive for special reasons than other.

Statistics are capable of various interpretations, even by the person presenting them. Any figures given from our records should be understood as merely indicating in a general way the results of treatment.

From November 1, 1920, the date of inception of our clinic, until October 31, 1926, we have admitted to our wards 87 cases of general paresis. Most of these received vigorous anti-

syphilitic treatment, but some were too far advanced or died too soon after admission for adequate treatment. Our statistics, however, are based on the entire number so that it cannot be said our results are based in the treatment of a selected group. The clinical diagnosis in all our cases was verified by blood and spinal fluid examinations and only those cases were included whose spinal fluid serology yielded a positive Wassermann reaction, and the typical paretic gold curve.

Our usual treatment until January, 1925, was weekly injections of 4/10 grm. phenarsenamine (the product of the Provincial Board of Health) intravenously; intramuscular injection of one grain mercury salicylate, and every four weeks a thorough spinal drainage, allowing all the fluid to escape until only a drop every few seconds would fall.

After January, 1925, this treatment was modified by substituting tryparsamide for the phenarsenamine, and a few cases had bismuth hydrate in place of mercury salicylate. The spinal drainages were continued as before.

It may be interesting to compare with these the group admitted from 1916 to 1920 inclusive which, with few exceptions, received no general antisyphilitic treatment. These groups may be referred to briefly as the phenarsenamine, the tryparsamide, and the untreated group respectively. Table 1 shows the results obtained in the untreated group.

TABLE I.

THE UNTREATED GROUP

	Admissions	Deaths	Discharges
1916	6	3	0
1917	8	4	1
1918	10	9	3
1919	13	12	0
1920	11	8	0
Total	48	36	4

Of the 4 discharges, not one was a genuine remission. One of these patients was taken home to die; two were taken away by relatives, but were returned to the hospital within a few weeks, and died during the same year. The fourth case had occasional paretic seizures with confusion. He stayed at the hospital only six weeks, when he was released and we have had no information concerning him since. These results in the untreated class, then, are practically nil, although several of these cases were given a small amount of antiluetic treatment. We are aware that spontaneous remissions do occur occasionally, but during this five year period there were no such occurrences among any of our paretic patients. The untreated cases therefore did badly, and the hopeless prognosis invariably given in former years was abundantly justified.

Coming next to a consideration of the phenarsenamine group we note the following results:

TABLE II.

PHENARSENAMINE GROUP

	Admissions	Deaths	Discharges
1921	10	7	4
1922	12	8	1
1923	18	10	0
1924	12	14	7
Total	52	39	12

We have here a very distinct improvement in the discharge rate compared with the untreated group. These 12 cases were however not all remissions. Three of them were transferred to Westminster Hospital not materially improved, and have since died. One was taken home to die; one eloped; one was taken home unimproved, and was returned to the hospital later, dying the same year. Thus only six of the 12 actually made good remissions and are still enjoying good health. One of these left our hospital in 1921, and has been working continuously since. The blood and spinal fluid were negative on examination last year. None of the others has had a recurrence of symptoms. To these six cases with good remissions should be added another who was not discharged until the following year, although his treatment was entirely that of the phenarsenamine group. Thus we have 7 remissions in 52 consecutive admissions, or 13 per cent.

Coming finally to the tryparsamide group we note the following results:

TABLE III.

TRYPARSAMIDE GROUP

	Admissions	Deaths	Discharges
1925	17	6	9
1926	18	8	8
Total	35	14	17

A longer period of treatment would have afforded more trustworthy statistics but even a two-year period gives at least a rough indication of the efficacy of the treatment. It will be noted that here we have a discharge rate, based on the

admissions, as in the former tables, of 48 per cent.

The 35 admissions represent only 30 patients, one patient having three admissions in this group and a previous admission in the phenarsenamine group, so he is omitted. Two other patients were admitted twice during this period. Of the 17 discharges, 12 were clear clinical remissions, all of whom were able to resume their occupations successfully. These 12 cases in remission represent a rate of 40 per cent of the admissions during this period. Kirby[3] reports about 30 per cent of his tryparsamide group showing complete clinical remissions, although he does not state that his cases were consecutive admissions, and are possibly a more selected group than is our group. Presuming therefore that our 40 per cent discharges in this group might be reduced over a longer period, there is sufficient evidence to warrant the conclusion that tryparsamide is a far more satisfactory form of treatment than phenarsenamine.

Serological improvement has not kept pace with clinical improvement. While nearly all cases show diminution in the number of cells, and a lessened amount of globulin, the Wassermann test yields much less readily and the gold curve has shown an appreciable reduction in only a few cases. This is perhaps due to the speed with which clinical improvement has manifested itself and we have allowed such patients to return to work, advising them that treatment should be continued and if possible having the patients return to the hospital as out-patients to receive their treaments from us. We have attempted to follow up all cases discharged and have been able to do so in the majority of instances, as we have had reports on them from their physician or relatives from time to time and they have returned to the hospital for examination and courses of treatment.

It is interesting to note that the neurological signs present on admission usually remain without change no matter how much treatment is given. These signs are evidently therefore the result of definite destructive lesions in the nerve tissue, which treatment cannot be expected to materially benefit. The mental symptoms conversely are at least in the earlier and more acute stages not the result of such lesions, but rather of inflammatory and exudative changes which respond readily to appropriate treatment. If the destructive process can be arrested in the earlier stages, presumably before any definite mental changes are apparent, the prognosis should be much better than in cases where the diagnosis is not made until late in the course of the disease.

There is one very real danger in the administration of tryparsamide which does not occur with other arsenicals, *viz.*: impairment of vision in a small percentage of the cases, which may go on to complete blindness. In an illness where the prognosis without treatment is certain death, one is warranted in taking a certain amount of risk of impairing the vision, but this risk can be kept to a minimum by having the eyegrounds examined by a competent ophthalmologist before treatment is commenced, and in those showing any degree of optic neuritis or atrophy tryparsamide should be administered very cautiously. We have adopted the further precaution of questioning such a patient before each treatment is given if he has experienced any subjective symptoms, such as specks before the eyes, difficulty in reading or in working, and if there is the slightest complaint the treatment is withheld. These later precautions have been taken as the result of nearly complete loss of sight in one patient who had not complained of any change in his sight, due to the fact that he was so sluggish mentally that he had not mentioned it; it was not until he was seen to have difficulty in finding his way about, that the defect was discovered. Two other patients complaining of a beginning defective sight both recovered on further treatment being withheld.

A few of our patients have had alternate courses of tryparsamide and phenarsenamine. We believe this is good practice. The tryparsamide should be given first as it appears to offer the best opportunity for improvement of the mental symptoms. After a course of eight to ten tryparsamide treatments, the phenarsenamine should be given with the object of attacking the spirochætes which may be lodged elsewhere than in the nerve tissue.

We have had no personal experience with the therapeutic use of malaria in this disease. Kirby reports approximately the same percentage of clinical remissions with malaria as with tryparsamide, but in using malaria there is a definite mortality from the disease itself amounting in his cases to about 9 per cent of

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the cases treated. This is a serious drawback to the general use of malaria, and if tryparsamide will give as good a percentage of remissions with no danger to life, it is our opinion that tryparsamide is the better treatment. Cases that fail to respond to tryparsamide might receive inoculations with malaria. It would be very interesting to note what result, if any, could be obtained from inoculation with malaria in patients who had been unsuccessfully treated with typarsamide. So far as we know this phase of treatment has not been investigated. We are reserving it for a future study.

Conclusions

1. The hopeless prognosis in general paresis is no longer warranted.

2. Intensive treatment with tryparsamide as the chief therapeutic agent, assisted by bismuth or mercury and frequent spinal drainages, has given in our clinic a remission rate of 40 per cent in unselected cases.

3. The earlier in the course of the disease treatment is begun, the more hopeful is the prognosis.

4. Any patient above the age of 35, showing nervous or mental symptoms of obscure origin, is a candidate for lumbar puncture. Serological examination of the spinal fluid affords absolute confirmation or denial of the diagnosis of general paresis.

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INFECTIVE CORONARY THROMBOSIS

Case Report With Unusual Features

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DETAILED instances of infectious thrombosis of the coronary arteries or veins are neither numerous nor easily found. The literature of to-day deals largely with disease of the coronaries seen as a late event in chronic arterial degeneration. On the other hand, the suggestive references of many authors when dealing with the question of arterial involvement in the course of general infections, or when speaking of thrombosis and embolism, lead one to expect that complete records of coronary thrombosis, in typhoid, influenza, pneumonia, rheumatism or sepsis will be uncovered for our inspection, for certainly the accident will always be of surpassing interest to any observing mind. Such is not the case, however, and as one peruses the now large collections of cases of coronary arterial disease, or the compilations of the instances of spontaneous rupture of the heart, one is struck with the relative absence of descriptions which would enable one to say that in this or that case the infarction of the heart wall had followed close on some acute bacterial infection of the vessel coats with subsequent thrombus formation.

Since the arteries and veins may be involved in the thrombotic process in so many of the infectious disorders, and since the recorded instances of femoral, cerebral, mesenteric, and axillary vessel involvement show the generalized nature of thrombo-arteritis or phlebitis in infections, one wonders if the rarity of gross or extensive thrombosis in the coronaries, as part of these infections, may not be more apparent than real. It is possible that some of the cardiac accidents seen in typhoid, influenza and pneumonia mean more than the blocking of a minute though important terminal twig with small thrombi or more than

the explanation commonly given to these accidents "toxic action on the myocardium or conduction tissues". The anastomosis of the coronaries, as pictured so well by Gross, is fairly free, and an infarction of considerable size must often be quickly compensated for. Should there have been no pain and no friction rub to indicate the extent of the process, even a fair sized thrombo-infarct would escape our notice. It would be interesting in the study of infections to know what has lain behind many of the acute cardiac accidents which, though showing extreme urgency, have allowed the patient to recover.

Of the many references to infectious thrombosis of veins or arteries, those dealing with the condition as found in typhus, typhoid, pneumonia and influenza are the most comprehensive. Murchison describes this thrombosis well in typhus and typhoid; the various systems and text-books all speak of thrombo-arteritis of various vessels. Welch and Osler refer to the frequency with which the blood vessels are affected in influenza, and state that in this disease the inflammation of their coats may occur very early. Etienne makes reference to the occurrence of coronary thrombosis on the fifteenth and first day of typhoid. Blumer states that "infectious thrombosis may involve the visceral arteries, especially those of the *heart*, brain, lung and intestines." Most of the recorded cases of acute arteritis seem to be instances of vessel affection in typhoid and in pneumonia of influenzal origin. Thayer's description of the condition of the blood vessels in typhoid fever, and the articles by Klotz dealing with the same condition in rheumatism, influenza and other infections, should be carefully gone over by anyone who has more than a passing interest in the manifestations of the acute infections as concerns the involvement of the veins and arteries.

The case we wish to report is of exceptional interest in many directions. Recovery after prolonged bacteriæmia, after phlebitis, and after symptoms and signs which suggest pulmonary embolism is perhaps not unusual. The interesting picture, however, of multiple vein involvement in a thrombotic process, which included the splenic vein and produced a large splenic tumour is not often seen and must be one of the rarer complications of a septicæmia. To have shown in addition to these complications, so suggestive of a general infection, the syndrome of blocking of the coronaries, is certainly a remarkable happening, and one that suggests that the veins or arteries of the heart itself were also involved in the same infectious process.

The case history is as follows:—Mrs. O. was seen in March, 1925, complaining of fever, vomiting and pain in the abdomen. Of interest in her past history was the detail that she had escaped the general run of illnesses, though subject to attacks of biliousness from her childhood. She was married at 24 and was free from all such attacks for ten years. Then there was the recurrence from time to time of spells of biliousness, fever, and vomiting which lasted two or three days at a time. Six years ago there began a series of symptoms equally suggestive of gall bladder disease; pain in the stomach, with flatulence, belching and vomiting. This was most marked after meals, and was particularly noticeable after eating such things as cabbage, meat or pork. There was no hunger pain, and the picture of recurring distress relieved by food or alkalies was never in evidence.

Her present attack had begun four weeks previously. She became very constipated; fever developed and she had a chill. This was followed by severe pain in the epigastrium, which radiated up behind both scapulæ. At this time there was no vomiting and no jaundice but the pain was very persistent. Eventually, the bowels moved freely and she felt better, but in a day or two pain recurred in the epigastrium and in the back; she became nauseated and vomited steadily for five days; there was some blood in the vomit on one occasion. The fever had apparently ranged steadily between 101° to 102.° After her entry into hospital the pain which had formerly been intermittent became persistent and colicky in nature, slight jaundice developed and a tumour began to push down from the splenic and pancreatic areas.

Before the appearance of the splenic tumour (?) or pancreatic swelling (?) it was considered probable that she was suffering from the impaction of a gall-stone in the common duct. The stools had been quite white, there was

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bile in the urine and as mentioned she had become jaundiced.

With the appearance of the tumefaction, the jaundice had begun to lessen, and colour had returned to the bowel movements. She was, nevertheless, very ill. The temperature remained high, and the count of the white blood cells began to rise reaching 40,000 to 60,000 per cu. mm. There was no distinct change for the better after ten days in the hospital, and the high fever, the high polymorphonuclear leucocytosis, and the rather fixed mass in the left hypochondrium suggested that perhaps we were dealing with a spleen swollen as a result of abscess formation, or possibly with an infected cyst in the tail of the pancreas. It had been noted that the movement of the mass was less than that usually seen with simple splenomegaly. A positive blood culture giving staphylococcus aureus pointed so strongly in the direction of gross infection that it was decided to determine the nature of the tumour in the left hypochondrium. At the operation it was found that the mass was the spleen; that it was limited in its movements by adhesions; that the splenic vein was dilated, of an enormous size, and filled with a firm, granular, gray-white thrombus, which seemed to extend upwards to the pancreatic veins. Culture from the thrombus and blood in the splenic vein gave again the staphylococcus aureus. The spleen was removed at operation, it being considered that with the blocking of the splenic vein it would not be likely that the organ would ever reduce in size or be of much use to the patient's economy. The immediate post-operative period was not eventful. The temperature, however, never came down, the white blood count remained high, and the blood cultures gave regularly the golden staphylococcus. In spite of these threatening manifestations of a general infection, the patient maintained her weight, remained of a good colour and no longer impressed one as being so dangerously ill. The heart showed no suspicion of involvement; there could be detected no areas of suppuration; the teeth, however, were in such a state that it was impossible to avoid the conclusion that they represented the point of entry of the infection, which to our minds, was one that had first struck the pancreas, spreading later through the pancreatic vessels to the spleen. For a matter of three weeks very little change was evident in any direction, the white blood count remained high, the temperature though less elevated than formerly, still touched a point as high as 101° and 102.° At the end of three weeks began another series of involvement of the veins. First, inflammation and blocking of the left femoral vein, followed in ten days by the same condition in the right leg. The temperature reached a higher level. The patient, however, did not seem so desperately ill as formerly even though there were signs which suggested that emboli from the thrombosed veins had lodged in the lungs. For two weeks subsequent to the note "that the lungs showed consolidation probably embolic in origin," there was very little change in the patient's condition. The blood cultures still showed the presence of staphylococcus aureus; both legs were swollen and œdematous, and the temperature remained at 100° and 101.° She seemed, however, to be gaining strength. Her colour was good, and the lungs cleared, but the white blood count remained high. On the night of April 21st, the patient was awakened from sleep by a terrific pain over the heart and behind the sternum; the severity of the pain was such that she collapsed at once, and was found by the nurse almost pulseless, pale, sweating and evidently in a condition of extreme urgency. It was thought at the time by those with her that she was probably the victim of another pulmonary embolus. It was difficult, however, to determine this point though there was no expectoration and no pronounced amount of dyspnœa; the sounds over the heart were noted as being very rapid and very weak. Contrary to expectations she lasted through the night though notice was sent next morning to one of her attending physicians that it was not likely that he would find her alive by the time he reached the hospital. Examination almost 12 hours after the onset of severe pain, showed the patient pale and collapsed with clammy skin and a pulse that could only with difficulty be felt. The blood pressure could not be recorded. There appeared to be nothing but a few crackles in the lungs, the condition which had persisted after the embolic attacks previously noted. The heart area seemed

enlarged both to right and left; the sounds were faint and associated with a distinct to-and-fro pericardial rub; the rhythm was regular; the rate however was much increased, 160-180. The patient still complained of the feeling of soreness behind the sternum and over the præcordium and this soreness persisted for the next three days. The pericardial rub did not last more than the 24 hours following its detection. The patient continued to slowly rally and after several days of complete exhaustion began to show signs of recovery. Further enlargement of the liver could not be determined; it is to be remembered that the liver was enlarged in the beginning of her illness. Since the temperature was elevated and white blood count high, no variations of interest could be recorded along these lines.

The picture here recorded resembles closely Herrick's sketch of coronary artery thrombosis, acute in nature. The angina-like pain of many hours duration, the complete prostration of the patient as a result of its severity, the flickering rapid pulse, with the development of a pericardial friction, indicated the severity of incident. While the possibility of pulmonary embolism was considered, it was felt that the prostrating angina, and the distinct pericardial friction pointed more definitely in the direction of coronary thrombosis, and we have preferred to regard the symptoms in this light. The subsequent history of the case has also been more confirmatory of the diagnosis of coronary thrombosis than of pulmonary embolism: for several months she progressed favourably, then signs of heart weakness developed and she died with all the symptoms of heart failure, early in this year; two years after the onset of her illness.

There are few cases recorded with a more interesting collection of clinical details. The prolonged bacteriæmia subsequent to the illness, which suggested an acute pancreatitis; the development of splenic tumour and hyperleucocytosis, with the thrombosis of the splenic vein invite many suggestions as to the nature of some of the chronic conditions affecting the portal system and the spleen. To have the report from the pathological laboratory that the spleen in the histological picture suggested Banti's disease is a detail of surpassing interest, when one realizes that the splenic vein contained a thrombus of infectious origin. No one concerned as to the nature of Banti's disease and of the chronic enlargement of the spleen can afford to disregard the findings in this complicated case. It must be considered unusual in any patient to have thrombosis of the splenic vein, thrombosis of both femoral veins, two attacks of pulmonary embolism, prolonged bacteriæmia, removal of the spleen and recovery therefrom, yet to all these trials undergone successively by our patient, was added the appalling manifestation of acute coronary thrombosis, the nature of which, owing to the probable association with infection, requires a few extra words. We have touched upon coronary thrombosis as part of acute infection in our earlier pages and mentioned the fact that although its existence is assumed by many authors, yet illustrative cases of the accident are singularly rare. One feels however, that the accident has occurred much more frequently than reports would indicate. The recent remarkable compilation of literature on coronary thrombosis by Benson, which appeared in the *Archives of Pathology and Laboratory Medicine*, December, 1926, should be consulted by anyone interested in the affection of the heart's arteries. On page 887 the articles by Longcope and Libman are referred to in which these authors state, "that coronary thrombosis can occur with or without accompanying or preceding sclerotic changes of the vessel wall." Benson's own words are sufficiently striking to attract attention: "Medical writing contains several references and could contain more of thrombosis arising suddenly in vessels which are not sclerotic." We suggest that in our case the acute thrombosis of artery or vein arose as part of an infectious process rather than as an incident in connection with coronary arteriosclerosis.

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THE SYSTEMATIC STUDY AND CLASSIFICATION OF STEREOGRAMS OF THE CHEST

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IN the endeavour to allow one to visualize clinically or "place" the individual case of pulmonary tuberculosis, many different systems of classification have been advocated or adopted. In the main each system or combination of systems has attempted to classify both the degree of illness, disability or recovery, together with the extent of the pathological involvement. The latter for long was based upon the physical findings and divided into three degrees or stages: *Incipient, Moderately Advanced,* and *Far Advanced.* With the advent of stereoscopic plates these three degrees of involvement were recognized with similar definitions and the same nomenclature except that the word minimal began to replace incipient, a word which it was felt was out of place in such a classification.

Such similarity in terminology may leave one in doubt as to whether the classification of an individual patient is based upon the physical signs, the x-ray, or a combination of both. While each method of examination has its own type of value and significance, the terminology should definitely indicate upon which method the classification has been made. It is also felt that the classification of the extent and character of the disease as revealed by a careful stereoscopic study can with advantage be enlarged upon: such a classification should have its own distinct terminology, and in it, terms should not be used which already have an interpretation based upon physical findings, or worse still, a value which can only be arrived at by a comprehensive clinical study such as *Active, Apparently Arrested, Latent,* and so forth.

In attempting to work out an extended classification of pulmonary tuberculosis based upon stereoscopic studies, it was found necessary to take into consideration films of doubtful as well as those of definitely non-tuberculous etiology. This inevitably led us into a consideration of what constituted a careful study and report. We felt this to be so important that in proposing a classification of stereograms of the chest, we believe the essentials as well as *a method of study* should be outlined. To be concrete the following is suggested. It has been used for years by one of us, has been found simple, easy to follow and, we believe, allows the reader of the report to reconstruct the picture as seen, described and interpreted by the radiologist or clinician.

An essential in studying stereoscopic plates is the adoption of a definite routine in the *order* in which observation is directed. To begin with this may be a bore, in time it becomes automatic, but such a system of study is the price of safety—chiefly in the avoidance of errors of omission. It may not be necessary to include each point in any report, since to do so might easily lead one into the sin of verbosity, but each point should nevertheless be observed in every study and the important points noted in order.

1. *The Bony Thorax.*—This should be quickly gone over and any abnormalities or peculiarities noted, *e.g.*, accessory ribs, spinal curvatures, old fractures, operations such as rib resections, and so on. If nothing unusual is noted it is simply reported normal.

2. *Heart and Great Vessels.*—A survey is made and notes recorded of any departure from the normal.

3.—*Diaphragms.*—Note the evenness of each, the integrity of the costo-phrenic angle, presence or absence of adhesions, and so on.

4. *Pleura.*—A note as to apparent pleural opacity over the apices, in the interlobar pleuræ, or at the bases, or any other points which may require comment.

5. *The Hila.*—Each hilum is studied, compared with its fellow and recorded, as it conforms to or departs from the accepted average—obviously a relative matter.

6. *Lung Fields—Right Side.*—Beginning at the right hilum we should trace the vertical bronchus, the first and second interspace trunks, and the posterior apical trunks, that is, the entire upper lung field, recording any observa-

tions in order: then the right mid-lung field and finally the right lower, *i.e.*, the entire distribution of the right descending bronchus.

Left Side.—The left side is recorded in the same order, *viz.*, vertical bronchus, first and second interspace trunks and posterior apical trunk: then the left mid-lung field and finally the left lower.

7.—*Conclusion.*—This paragraph is of course optional. It is, however, always appreciated. In it the radiologist is given an opportunity to interpret the shadows described in terms of pathology, either as a fact or as his opinion.

It is not the purpose of this paper to attempt to describe the appearance of lesions, but we believe it will be accepted that there are opacities which may be regarded, because of their appearance or their location, or both, as characteristic of pulmonary tuberculosis; others which are too indefinite to be so regarded; and others again which we could state are definitely non-tuberculous. With this general understanding, the following classification of stereograms of the chest is presented.

A.—The Tuberculous Group

Positive Shadows, interpreted as characteristic of tuberculous infiltration of the true pulmonary tissue. In this group three terms, namely, *Minimal*, *Intermediate* and *Extensive* involvement are suggested to replace those previously employed, *i.e.*, *Incipient*, *Moderately Advanced* and *Far Advanced*, because of the use and significance of these latter terms in clinical classifications. Only stereograms should be included in this general group which show lessened radiability* of such a character that one is justified in interpreting it as undoubted evidence of a positive tuberculous lesion involving the alveolar tissue of the lung in sufficient degree that, were section possible, this lesion would be evident to the naked eye. Usage would seem to justify the employment of the term *Parenchymatous* as descriptive of these shadows. In estimating the *equivalent* of actual pulmonary involvement, sufficiently intense shadows can be regarded as indicating complete involvement throughout the area occupied by the opacity: less intense shadows would indicate that only a part of the lung volume, in which the shadows appear, is actually diseased. For classification it is intended that the estimate be based upon what would appear to be the total amount of disease, and not upon the volume of lung throughout which tuberculous infiltration, caseation, fibrosis or calcification occurs.

The degree of involvement indicated by these three terms and *Miliary* is subdivided and defined as follows:—

1. *Minimal Involvement—1st degree.*—Lessened radiability as shown in the form of light mottling, haziness or flocculent opacities, confined to one area or a cluster of contiguous areas not exceeding 1″ (25 mm.) in cross section. This is intended to represent the smallest lesion which can be positively identified as a definite tuberculous lesion.

Minimal Involvement—2nd degree.—Lessened radiability of the same general or more intense type with or without enclosed opacities interpreted as calcification. The total volume (which may be bilateral) not to exceed the estimated *equivalent* of the volume of lung lying above the level of the first chondrosternal junction and the vertebral articulation of the third rib, *i.e.*, a cross section of the chest at the level of the first rib as seen in the plates. The presence of small cavities automatically advances the classification one degree.

2. *Intermediate Involvement—1st degree.*—Lessened radiability of the same general or intensified type as above. The total volume not to exceed the estimated *equivalent* of the lung tissue lying above the level of the second chondrosternal junction and the vertebral articulation of the fourth rib, *i.e.*, a cross section at the level of the second rib, or approximately the equivalent of one third of the lung tissue of one side.

Intermediate Involvement—2nd degree.—Lessened radiability of moderate or greater intensity whether scattered or partially localized. Total volume not to exceed the estimated *equivalent* of the lung tissue lying above the level of the fourth chondro-sternal articulation and the vertebral articulation of the eighth rib, *i.e.*, approximately one half of one lung. Rarefactions interpreted as cavitation not to exceed 1″ (25 mm.).

3. *Extensive Involvement—1st degree.*—Lessened radiability of a more intense type or greater extent, or both. Total volume not to exceed an estimated *equivalent* of the lung tissue of one side.

Extensive Involvement—2nd degree.—Shadows indicating a greater degree of involvement than that included under *Extensive* first degree, or rarefactions indicating a greater degree of cavitation. Such cases would include total involvement of one side, with moderate involvement of the other: a degree of involvement of a part of both lungs estimated as totalling more than the pulmonary tissue of one side.

* "Lessened Radiability" is used to cover such terms as light to heavy haziness or clouding; light to heavy mottling; light to heavy smudging, filming, smokiness; snow flaking; flocculent to dense opacities, etc.

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4. *Miliary Involvement.*—Sub-classification of this group along the lines of estimated lung involvement, would seem to be impracticable, and as well serve no useful purpose. The following three main types are suggested as illustrating variants of, or additions to, (what it is usual to accept as evidence of) miliary involvement of the lungs. It is recognized, however, that films may be seen illustrating combinations of any two or all three.

Type 1.—Multiple discrete densities ranging in size from pin point to pin head (under 2 mm.) scattered more or less symmetrically throughout the greater or the entire portion of each lung. Shadows showing evidence of calcification or fibrosis would be regarded as an unusual variant of the films contemplated.

Type 2.—Discrete densities, the outstanding feature of which is the asymmetry in their distribution and size (up to 5 mm. in diameter), but which are interpreted as miliary tubercles. Evidence of healing by calcification or fibrosis is to be expected in the majority of instances.

Type 3.—In addition to the presence of miliary tubercles (the essential feature of the films) there are present shadows indicative of a certain amount of tuberculous infiltration, caseation or fibrosis of the pleura, the true parenchyma or the lymphatic glands.

N.B.—*Pneumothoraces* if small may be regarded as small cavities, and so classified, *i.e.*, they advance the classification one degree; if extensive, and thereby obscuring the pathology of the collapsed lung, they are to be described but not included in the classification otherwise indicated.

B.—Subminimal (Tuberculosis Suspect)

This most important group deserves much more consideration than present space permits. It may be sufficient here to indicate that this term is intended to include those films in which the shadows are such or so placed in relationship to each other that a probable tuberculous etiology can be advanced. Such findings include groups of glands in and about the hila (some or many of which may be caseous, caseo-calcareous, or have formed conglomerate masses and in consequence recognizable as tuberculous) together with accenuation of the linear markings, especially of the vertical bronchi; first or second interspace trunks, or posterior apical trunk, with possibly some definite pleural thickening over the apex. There is, however, no cloudiness in the parenchyma to give positiveness to one's opinion and the most that one is justified in stating is that the picture is decidedly suspicious; that there is probably a tuberculous etiology which, whether it fits in with the clinical picture or not, has not extended into a definite x-ray parenchymatous involvement.

Occasionally pictures will be found in which the degree or grossness of the accentuation may leave one in doubt as to whether or not it represents a true, though multiple parenchymatous involvement. It is intended that these films should be reported as *subminimal* unless the interpreter feels he is justified in presenting his opinion as a fact. In other words it is recognized there will be border line films between this class and *minimal* first degree, just as there will be border line films between the following class *indeterminate* and the *tuberculosis suspect.* Our hope, however, in this extended classification is to prevent a film being considered, for example, a *minimal* first (or second) degree by one observer and *indeterminate* by another.

C.—Indeterminate

This group is designed to include those stereograms in which, while the radiability is less than normal, there are no shadows sufficiently marked to definitely suggest a differential etiology. Such findings are commonly described as *peribronchial, studding, accentuation of lung markings,* etc. Usage would seem to justify the term *peribronbronchial* on the understanding of its lack of etiological significance. It is almost unnecessary to note in this connection that *studding* may frequently be associated with non-tuberculous infections, with non-infectious factors, and, indeed, may be found in the films of individuals giving no indication of past or present ill health.

The line of demarcation between this group and the preceding is obviously a fine one. In both a continuance of the otherwise unexplained clinical condition necessitates re-examination, and the closest co-operation between clinical, laboratory, serological, and radiographic methods before a positive opinion can be given.

The case may later prove to be tuberculous or not; but *at the time* the films lack those radiological findings necessary for one to make a diagnosis either as a matter of opinion or as a fact. Lessened radiability of sufficient degree will occasionally be encountered that will enable one definitely to conclude that there is actual involvement or replacement of true pulmonary tissue,

though for the moment the etiology may be one of conjecture. These are referred to under the following section.

D.—The Non-Tuberculous Group

There remain to be considered those stereograms which may be properly interpreted as non-tuberculous. Some of these may require further study than a single pair of stereograms before such a definite opinion may be arrived at, such as, the use of lipiodol in bronchiectasis, but as a rule such studies are necessary more for the purpose of securing additional information than for the purpose of diagnosis.

The whole group is obviously a large one and the purpose of the present paper will be served if we merely suggest a grouping in which the more important of these may be conveniently arranged.

1. *Foreign Bodies in the Bronchi:*—
   a. Opaque.
   b. Non-opaque.
2. *Silicosis:*—
   This disease is inserted in this position following foreign bodies, since the particles are primarily foreign bodies, the effects and sequelæ which they produce being entirely secondary.
   a. Ante primary.
   b. Primary.
   c. Secondary; (frequently complicated by an added tuberculous infection).
3. *Infections:*—
   a. Simple bronchitis.
   b. Bronchiectasis.
   c. Lung abscess.
   d. Pneumonia:—
      Lobar
      Broncho-pneumonia.
   e. Massive collapse.

4.—*Neoplasms*—
   a. Mediastinal adenopathy:—
      Hodgkin's disease.
      Lympho-sarcoma.
   b. Primary carcinoma of lung.
   c. Secondary carcinoma of lung:—
      Lymphatic.
      Embolic.
      Direct extension, etc.
   d. Primary sarcoma of lung.
   e. Secondary sarcoma of lung.

In somewhat graphic form the following general summary is presented.

A. *Positive Tuberculosis.*
   1. *Minimal Involvement.*
      1st degree—Up to 1″ (25 mm.).
      2nd degree—Up to the equivalent of the tissue above the level of a cross section at the 1st rib as defined. (1st and 3rd ribs).
      N.B.—Small cavities advance the classification one degree.
   2. *Intermediate Involvement.*
      1st degree—Up to the equivalent of the tissue above the level of a cross section at the 2nd rib as defined (2nd and 4th ribs), approximately one-third of one lung.
      2nd degree—Up to the equivalent of tissue of one half of one lung. Maximum cavitation 1″ (25 mm.).
   3. *Extensive Involvement.*
      1st degree—Up to the equivalent of tissue of one lung.
      2nd degree—Equivalent of more than the tissue of one lung.
   4. *Miliary Involvement.*
      Type 1—Pin point to pin head densities symmetrically placed.
      Type 2—Densities up to 1/5″ (5 mm.) asymmetrically placed.
      Type 3—Densities (miliary) plus non-miliary involvement.
      N.B.—Pneumothoraces if small may be regarded as small cavities: if large not included in classification.

B. *Subminimal (Tuberculous Suspect)*
   No true *parenchymatous* shadows.

C. *Indeterminate Etiology.*
   Shadows lacking etiological interpretation.

D. *Non-tuberculous.*
   Shadows indicative of non-tuberculous pathology.

Diphtheria Immunization in Providence.—On the basis of more than three years' experience in Providence, involving the Schick testing and immunization of some 15,000 children, it would appear that toxin-antitoxin immunization eliminates approximately 90 per cent of the risk of contracting diphtheria in the immunized group. During this time 38 per cent of all children in the age group 5-9 and 24 per cent of the children in the 10-14 year group have been immunized. In the group under 5 years, in which the morbidity and mortality from diphtheria are practically at their height, hardly 4 per cent of the children have been immunized. To make immunization wholly effective, some method must be devised to reach this susceptible group. To meet this need the health department is sending to the parents of every 6 months old child in the city a notice urging immunization by the family physician or at a clinic. According to Clarence L. Scamman and Alton S. Pope, New York, results of the campaign can already be seen in increased demands on physicians and pre-school clinics for immunization against diphtheria.—*J. Am. M. Ass.*, February 19, 1927.

SECONDARY CARCINOMA IMPLANTED ON THE ENDOCARDIUM OF THE RIGHT VENTRICLE*

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MEDICAL literature contains remarkably few records of cases in which secondary carcinoma has been found within the cavities of the heart. I do not refer to instances in which metastases in the musculature of the heart have become large enough to encroach upon the chambers, which are not so uncommon though still exceedingly rare, but rather to the implantation of carcinoma cells upon the surface of the endocardium and their entanglement and subsequent growth there. The following cases therefore have been deemed worthy of being placed on record, not only on account of their extreme rarity, but also because they are singularly fine examples of the condition.

Case 1*

G. T. S., male, aged 65, was admitted to the medical wards of the Victoria General Hospital, Halifax, on December 28th, 1919, where he died the following day. He was a sailor and his previous history is unfortunately very imperfect. One week before his death he had come home complaining of constant and severe headache, weakness, and general malaise. There were no indications of intestinal obstruction. About 7 p.m., December 27th, he became suddenly unconscious and remained so until his death two days later. Some retention of urine was noted.

On admission to hospital, his pupils were distinctly unequal: he had Cheyne-Stokes respiration, and some friction sounds were detected at the base of the left lung. In the right hypochondrium a large, firm, nodular mass was found, and considered to be a new growth. The scrotum and legs were moderately œdematous. The urine contained albumin, casts, and some pus. The general condition was diagnosed as uræmia, and treated accordingly.

An autopsy was performed by me, the protocol of which (somewhat abridged) runs as follows:—

Slight œdema of the legs and scrotum. An umbilical hernia (omental) was noted.

Heart. The organ was moderately enlarged, and there was a distinct prominence, visible externally, of the anterior aspect of the upper half of the right ventricle. The tricuspid orifice admitted the tips of two fingers and was felt to be obstructed by a firm mass. The valve itself was normal, save that the inner cusp and attached papillary muscle was pushed to the left side by the mass referred to. On opening the right side of the heart, the upper third of the ventricle was occupied by a firm nodular growth, with a relatively smooth surface—except where there was a slight deposit of blood-clot—which measured two inches by one and a half by one and a quarter. (See Fig. 1). It

Fig. 1.—Secondary carcinoma in the right ventricle of the heart. The right ventricle is opened on the anterior wall. The malignant growth is marked with a +. A is the pulmonary artery.

was quite loosely attached to the surface of the endocardium, resembling a polypus and did not infiltrate the musculature of the heart in the slightest degree. The mass reached above to the lower border of the attachment of the pulmonary cusps. The pulmonary semilunar valve was competent, but the pulmonary artery at its origin was pushed over somewhat to the left. The other cardiac valves were normal. The muscle, as a whole, was hypertrophied, but notably the left ventricle.

The Lungs. Both were studded throughout with new growths, varying in size from that of a pin-head to a green pea.

The Spleen. Enlarged, soft, and pulpy; weight, 15 oz.

The Intestines. At the hepatic flexure of the colon was a large nodular mass the size of a small orange, of brownish-gray colour and with a mammilated cauliflower-like surface. This was divided superficially into two

* For the clinical notes of this first case I am indebted to the courtesy of Dr. L. M. Silver, to whose service the patient was admitted.

main portions by a shallow groove. There was no evidence of material obstruction at this point. The growth in question was continuous with a somewhat similar mass in the mesocolon and this, in turn, was attached to a mass involving the head of the pancreas. The intestines throughout were slightly distended with gas.

The Liver. Weight, 85 oz. Studded with numerous nodules of new growth, the largest being one and a half inches in diameter. The bigger masses were of whitish appearance, somewhat yellow and umbilicated at their centres. Some of them were in close proximity to the main branches of the portal vein at the hilum.

The Pancreas. The head of this organ was involved in a mass of new growth, the size of an orange, which sent a prolongation upward towards the diaphragm.

The Kidneys. Reduced in size, and finely granular.

Microscopical Examination

The Heart. Hypertrophy with slight fatty infiltration.

The Lungs. Section through an area of malignant deposit showed masses of various sizes, generally round or oval, arranged after an alveolar fashion. The cells were short columnar or cuboidal, tending to be arranged in rings, with an attempt at tubule formation, yet without definite lumina. The larger masses were necrotic in the centre.

The Pancreas. Moderate chronic interstitial fibrosis.

The Kidneys. Moderate chronic interstitial nephritis, most marked in the pyramidal regions.

The Liver. The liver substance was much congested. The secondary deposits consisted of cells of very varying shapes, arranged often in an alveolar fashion. In some places spindle-shaped cells were arranged with their long axes parallel to one another, suggesting an attempt at the formation of a continuous membrane of columnar cells. Here and there were also small lumina, and often there was a grouping of cells in rosettes as if tubule-formation were being tried. The tumour masses were surrounded by fibrous tissue and there was moderate necrosis, both of the tumour cells and stroma.

The Primary Growth in the Colon. No extended description of this is required. It was the ordinary, well-known, columnar-celled adeno-carcinoma of papillary type, with perfect and imperfect tubules, together with solid masses of spindle-shaped and polymorphous cells.

The Secondary Growth in the Ventricle. This reproduced exactly the primary growth. There were well-defined tubules lined by columnar cells, together with others formed of stratified cuboidal cells. Often, the tubules were large and dilated. There were also solid masses of polymorphous cells; also a very considerable fibrous stroma, which tended to be myxomatous. On the surface was a thin layer of fibrin. The growth showed numerous and extensive areas of necrosis, like those seen in the primary tumour and in the secondaries in the liver.

Comments

Secondary carcinoma of the heart is quite a rare condition, even more uncommon than secondary sarcoma. Blumensohn in 1,078 autopsies on cases of carcinoma found secondary involvement of the heart in only 3.15 per cent; in 160 cases of sarcoma the heart was secondarily attacked in 7.5 per cent. There is reason for thinking, however, that these figures overstate the case. I have tabulated below the figures given by a number of observers, which show this conclusively and probably give us a close approximation to the truth:—

Authors	*Autopsies on Carcinoma Cases*	*Secondaries in Heart*
Blumensohn	1078	34
Chambers	2161	7
Willigk	4547	9
Kohler	9118	6
Pic and Bret	1708	25
Thorel[1]	3000	6
Bryant	2942	6
Tadson	8289	6
Peters and Milne	1976	3
Ely	2161	7
	36980	109

This shows secondary invasion of the heart to occur in only 0.32 per cent of the cases.

The reason for the rarity of this event is, doubtless, that, owing to the direction of the coronary arteries, which come off at right angles to the axis of the aorta, it is almost impossible for foreign matter to gain an entrance into these small vessels in view of the rapid flow of the blood in the aorta. Almost equally unlikely would it be that masses of carcinoma cells, carried in the general blood stream, could effect a lodgement on the surface of the endocardium, even in the recesses between the columnæ carneæ. As a matter of fact, the immense majority of secondary growths in the heart reach it by extension from the neighbouring structures, œsophagus, lung, lymph-nodes, thymus, and mediastinum. Cases of secondary neoplasms implanted on the surface of the endocardium, such as these here recorded belong indeed to the *rarœ aves*. I have been able to find in the literature but very few cases in any way resembling them.

Kanthack and Pigg[2] found in a young man with a primary growth in the right testis, a curious dendritiform mass, in part hollow and cystic, attached to the tricuspid valve, projecting into the right auricle and, to a slight degree, into the right ventricle. The authors considered it to be undoubtedly a carcinoma. There were some unusual features about the microscopic structure, however, which make it open to question whether the growth were not a teratogenous blastoma.

Rist and Rolland[3] record the occurrence of multiple masses of new growth on the endocardial surface of the right ventricle, both mural and valvular, in a woman of forty. The main mass was near the apex, and some of the

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smaller ones higher up were warty. Several pedunculated growths, the size of a pea, were found on the posterior cusp of the tricuspid. The pelvic lymph-nodes were extensively involved and there were small secondaries in the lungs. The growths were what we would call squamous-celled epithelioma, and originated in the cervix of the uterus, which had been removed four years before for cancer (*épithélium pavimenteux spinocellulaire.*) The myocardium in this case was somewhat invaded.

Occasionally, free and unattached masses of new growth have been noted in the chambers of the heart. Thus, Geipel[4] records a remarkable instance of this kind on the right side, the growth being a hypernephroma. Osler,[5] in a child, found an embolus of sarcoma tissue blocking the tricuspid orifice, which originated in a sarcoma of the kidney that had grown into the renal vein. Von Recklinghausen has, also, noted the growth of sarcoma upon the endocardium between the papillary muscles.

Through the courtesy of Professors Oertel and Maude Abbott of McGill University, I am enabled to report two cases of secondary carcinoma developing upon the endocardium, neither of which has been published. The specimens are in the McGill Medical Museum.

CASE 2

SECONDARY CARCINOMA OF THE RIGHT VENTRICLE

The patient was an old woman who had died with primary carcinoma of the uterus (Osler, Montreal General Hospital, P.M. No. 599/1882.)

The heart is fatty, and the right ventricle is greatly narrowed by a fungating growth, resembling blood clot which is attached to its anterior wall and infiltrates the myocardium from the apex to the outer segment of the tricuspid valve, projecting towards the conus as a free conical mass, and partly occluding the orifice. The infiltrated heart muscle is transformed into a dense fibrous stroma, 2.5 cm. thick containing foci of carcinoma.

Two small masses of new growth project also into the right auricle and a small nodule may be seen on the chordæ tendine of the tricuspid. The right ventricle is much enlarged. The left side is free.

CASE 3

SECONDARY CARCINOMA OF THE RIGHT VENTRICLE

The patient was a man, aged 58, who died from adeno-carcinoma of the stomach. (Bell and Adami, Royal Victoria Hospital, Montreal, P.M. 77/1899.) The heart is small. On the anterior wall of the right ventricle, about half way to the apex, is a small irregularly-shaped outgrowth the size of a bean, having a peculiar lacunar or fenestrated appearance (resembling coral), lying in the depressions between the trabeculæ and embracing one of these within itself. A second similar nodule is situated 2 mm. lower down towards the apex.

Both these cases were regarded as examples of implantation of cancer cells brought by the general blood stream into the ventricle.

CONCLUSION

In conclusion it may be stated that when secondary malignant masses are found within the ventricles of the heart they may be, first, attached to the endocardium by implantation and incarceration, much as a tree grows out of the crannies of a rock when the wind has carried the seed to the spot; secondly, they may be free within the cavity, on the analogy of the ball or polypoid thrombus; and, thirdly, they may develop in the musculature and eventually encroach upon the cavity. It seems certain, from the size and microscopical structure of the intracardiac mass in the first case at least, that a relatively small cancerous embolus had lodged in the lacunæ of the ventricular wall and had subsequently grown into the considerable mass that was found.

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Systolic Blood Pressures of Healthy Adults in Relation to Body Weight.—A slight but statistically significant correlation between systolic blood pressure and the weight of a number of healthy persons has been found by Edward G. Huber, Atlanta, Ga., but on further analysis it appears probable that much of that correlation is due to the fact that underweight and hypotension are much more closely associated than overweight and hypertension. Forty-nine per cent of those who are more than 10 per cent underweight have subnormal blood pressures; only 18 per cent of those overweight have hypernormal pressures. Classifying blood pressures into two classes, those over 140 and those under 110, it is shown that 22 per cent of the former are underweight and 14 per cent overweight.—*J. Am. M. Ass.*, May 14, 1927.

DIPHTHERIA IMMUNIZATION WITH DIPHTHERIA TOXOID (ANATOXIN-RAMON)

By Max W. Bloomberg, M.D., and A. Grant Fleming, M.C., M.B., D.P.H.

Montreal

PART of the campaign to popularize diphtheria immunization conducted by the Montreal Anti-Tuberculosis and General Health League, with the approval of the local medical societies and the Department of Health, is the conduct of weekly immunization clinics, for children of 1-6 years inclusive, at the two health centres of the League. This is a report of the results obtained at the Coursol Street Health Centre.

The procedure has been as follows:—On account of the age group selected for immunization, preliminary Schick testing was omitted. The immunization material used was the diphtheria toxoid (anatoxin-Ramon) as furnished by the Connaught Laboratories, Toronto. At first, two injections of 0.5 c.c., at a monthly interval, were given; later, the dose given was 0.5 c.c. for the first and 1.0 c.c. for the second. Three months after the second injection, the parents were requested to bring the children back for Schick testing. The interval now being allowed is four months.

If the Schick test was positive, the children were either given a third dose, or else brought back later for re-testing.

To date, 572 children have passed through the clinic. Table I is a summary of the group.

TABLE I

One dose only; not likely to return for second dose	64
Two doses only; not likely to return for Schick test	89
One dose; likely to return for second dose	49
Two doses; likely to return for Schick test (Of these, 83 received 1 c.c. for second dose)	122
Two doses, one Schick test positive; not likely to return	17
Two doses, one Schick test positive; likely to return (Of these, 17 were given third dose)	26
Two doses, 0.5 c.c., Schick negative (68 per cent of group)	142
Two doses, 0.5 c.c. and 1.0 c.c., Schick negative (84 per cent of group)	31
Three doses, 0.5 c.c.; 0.5 c.c.; 1.0 c.c., Schick negative (94 per cent of group)	25
Three doses, 0.5 c.c.; 1.0 c.c.; 1.0 c.c., Schick negative (94 per cent of group)	5
Four doses, 0.5 c.c.; 0.5 c.c.; 1.0 c.c.; 1.0 c.c., Schick negative (100 per cent of group)	2
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Where the record is not complete, this is, in practically all cases, due to the family having moved from the city or to a considerable distance from the Health Centre. There have been very few definite refusals to return.

In this series, there have been practically no reactions. In only ten cases was there any complaint of a sore arm or of constitutional reaction, and in no cases was it at all severe.

Table II is a tabulation of the results of the Schick test on those receiving two 0.5 c.c. doses.

TABLE II

Two Doses 0.5 c.c. Diphtheria Toxoid With Subsequent Schick Test

Group of 208 Cases

Positive Schick Reaction (Non-immune)

Months after second dose	3	4	5	6	7	8	9	10	11	12
Number positive	18	19	14	3	2	8	6	6	1	9

Total—86. Of these, 20 became negative without subsequent doses and these are included in the following:

Negative Schick Reaction (Immune)

Months after second dose	3	4	5	6	7	8	9	10	11	12	13
Number negative..	65	32	15	8	1	5	7	1	4	2	2

Total—142 or 68 per cent.

It is impossible to estimate what percentage of the children treated become immune at the various intervals after injection. This can only be determined in an institution where all the children can be Schick tested every month. In the Health Centre group, for obvious reasons, this was not feasible. Nevertheless, certain facts can be elicited from these tables. As shown in Table II, 142, or 68 per cent, became immune after two 0.5 c.c. doses of toxoid. Of these immunes, at least 68 per cent became immune within four months after the second dose.

On the other hand, 68, or 33 per cent of the total number were found to be still susceptible when tested after four months had elapsed. Twenty of these became Schick negative later,

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leaving the percentage not immunized at 32 per cent. Therefore, it seems reasonable to suppose that two 0.5 c.c. injections of toxoid, given at an interval of one month, will successfully immunize approximately 68 per cent of those injected.

It should be noted that a considerable number of the non-immunes reacted positively to the Schick test many months after their injections, even as long as a year later. These undoubtedly require a greater amount of the toxoid. Furthermore, since by far the greater number had developed their immunity by the end of the fourth month after the second dose, we deemed it wise to adopt this period for the routine Schick test. If they are not immune at this time, they are given another inoculation. In this way, we hope to reduce the number of visits to the clinic which some of the children would otherwise have to make.

Table III is a tabulation of the results of the Schick tests on the group of 38 who received two doses, 0.5 c.c. and 1.0 c.c.

TABLE III

TWO DOSES, 0.5 C.C. AND 1.0 C.C., DIPHTHERIA TOXOID WITH SUBSEQUENT SCHICK TEST

Group of 38

Positive Schick Test (Non-immune)

Months after second dose	3	4	5	6	7	8	9
Number positive	1	3	2			1	1

Total—8. Of these, 1 became negative without subsequent doses and is included in the following:

Negative Schick Test (Immune)

Months after second dose	3	4	5	6	7	8
Number negative	19	7	2	1	1	1

Total—31 or 84 per cent.

Of those who received 1 c.c. of toxoid for their second dose, 38 in number, 31 or 84 per cent were immune at the end of eight months and of these, 85 per cent were Schick negative when tested four months after their second dose. It will be noted (Table III) that in eight cases the inoculations were not successful; in some even as long as nine months after the second dose. Four of these received their injection from the same vial on the same day, and it is possible that this lot of toxoid may not have been up to standard strength. If we omit these four, then the percentage of children successfully immunized by this method would be 91 per cent.

Table IV is a tabulation of the results obtained on those receiving more than two doses.

TABLE IV

MORE THAN TWO DOSES OF DIPHTHERIA TOXOID WITH SUBSEQUENT SCHICK TEST

Group of 32

Of this group, 25 had received two 0.5 c.c. doses and were Schick positive. They were given a third dose of 1.0 c.c. Five had received two doses, 0.5 c.c. and 1.0 c.c., and were Schick positive; they were given a third dose.

Results of Schick Test

Months after third dose	1	2	3	4	5	6
Number negative	23	3	2	1	0	1

Total—30 or 94 per cent.

The two who remained positive were given a fourth dose and became negative one month after the fourth dose.

In this group, 94 per cent were Schick negative after a third dose and 100 per cent after a fourth dose.

DISCUSSION

It is appreciated that the numbers reported are too small from which to draw definite conclusions, but they are large enough to indicate the need of continued work to find the dosage of diphtheria toxoid needed to practically assure immunity. Much harm will be done by using doses which are not sufficient and which will give a false sense of security. A few cases of clinical diphtheria amongst those presumably immunized will counteract much of the good done, in the eyes of the public, and will naturally discredit the work.

No details of age or sex are reported as they apparently had no bearing on the results. Neither was there any apparent result in cases where the interval between doses was more than one month.

Since, for practical purposes, the object is to produce immunity, it seems advisable to consider that when the two-dose routine is used, all those found Schick positive after four months should then be given a third dose, rather than counting on any large percentage of them becoming Schick negative later.

The irregularity of results seems to emphasize the necessity of Schick testing after injection, whether two or more injections are given.

In adapting diphtheria immunization to public health needs, the object is to secure permanent immunity as quickly as possible, in practically 100 per cent of those injected, with a minimum of reactions and with as little inconvenience as possible to the parents. For this reason, there is a practical value in the two-dose routine as compared with the three-dose. This is, however, only true if the two doses give immunity to practically as large a

percentage as the three doses, because immunity is, of course, the real object.

The 1.0 c.c. dose has not caused any reactions, and it is our intention to carry through a series of two 1.0 c.c. doses. Our reason for this is the much higher percentage of immunes obtained when the second dose was raised to 1.0 c.c., (84 per cent as compared with 68 per cent).

One vial of toxoid which had been frozen solid and then thawed was used. No reactions followed its use and it apparently had not lost any of its immunizing power.

Conclusions

1. Diphtheria toxoid is a successful immunizing agent.

2. Two doses of 0.5 do not give a sufficiently high percentage of immunes to warrant its acceptance as a satisfactory routine procedure.

3. The question of the optimum amount and frequency of dosage remains to be determined.

4. All immunizations should be checked by subsequent Schick testing.

5. Practically no reactions occurred in children of six years and under from either 0.5 c.c. or 1.0 c.c. doses.

6. The end of the fourth month after the last dose is apparently a practical time for Schick testing.

The results on the group given larger doses will be subsequently reported.

COMMERCIAL PHARMACEUTICAL PREPARATIONS*

1.—Nux Vomica

By H. M. Lancaster and A. L. Davidson

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THE following work was undertaken with the object of making a survey of the quality of certain potent pharmaceutical preparations used by druggists throughout the Dominion of Canada in dispensing physicians' prescriptions. The samples were purchased by Federal food and drug inspectors from manufacturers, manufacturers' agents, physicians' supply houses and retail drug stores in various cities from sea to sea. Some were supplied in manufacturers' original packages, but the majority were furnished loose in retailers' phials; in the case of the latter, the inspectors endeavoured as far as possible to ascertain the name of the manufacturer. They were also requested to inquire whether retailers as a rule manufactured their own tinctures extemporaneously from the liquid extract, but the reply from most districts was that owing to excise regulations respecting alcohol, it was found cheaper to purchase the tincture ready made from the wholesale houses.

In dealing with nux vomica, samples of tincture and liquid extract were collected. It was thought unnecessary to ask for the solid extract which is used almost exclusively in the compounding of pills, and the manufacture of compressed tablets, operations now seldom performed at the dispensing counter.

The raw material is the seed of Strychnos Nux-vomica, *Linné*, a moderate sized tree with small greenish white tubular flowers belonging to the family Loganiaceæ and found in India, Burmah, Cochin China and Northern Australia. The seeds are required by the *British Pharmacopœia*[1] to contain at least 1.25 per cent of strychnine and by that of the United States[2] at least 2.5 per cent of total alkaloids. In the British Empire, the liquid extract, prepared by a process of repercolation from powdered seeds of good quality and defatted by treatment with melted paraffin wax, must contain from 1.45 to 1.55 per cent of strychnine. The tincture is got by diluting this liquid extract with eleven volumes of 70 per cent alcohol and hence should contain from 0.12 to 0.13 per cent of strychnine. Fluid extract of nux vomica has now been deleted from the Pharmacopœia of the United

* This is the first of a series of papers on this subject. Published by permission of Dr. J. A. Amyot, Deputy Minister of Health.

States, but the tincture is retained[3] and is prepared directly from the seeds by percolation: a standard of from 0.237 to 0.263 per cent of total alkaloids is prescribed.

The method of assay used was that of the *British Pharmacopœia*, 1914,[4] with the addition that the crude total alkaloids were weighed but not determined volumetrically as directed by the American authorities.[3] This procedure enabled one to ascertain whether samples below B.P. strength would be likely to conform to United States standards. It will be noted that our neighbours have based their criterion on total alkaloids whilst we appraise nux vomica in terms of the strychnine content alone. Inasmuch as strychnine is forty times as potent as brucine, the other principal alkaloid, and as the proportion of strychnine to brucine in the seed varies as widely as from 3:1 to 1:2, there is much to be said for the British point of view.

A considerable amount of criticism has been directed against the B.P. assay process and suggestions as to its improvement have not been wanting. Moreover, other methods are available for the determination of alkaloids. But it must be borne in mind that whilst these methods may be unquestionably superior in the eyes of some, they can be employed only when after repeated checking they give the same results as the official process, for it is upon that alone, no matter how faulty it may be, that legal samples must be assessed. In the particular case under discussion, however, it is but fair to say that many of the samples examined were done in duplicate and some in triplicate and that the majority of these checked to well within 5 per cent absolute error.

In all, one hundred and six preparations were examined: forty-one of these were liquid extracts and sixty-five tinctures. The latter passed the ordeal more successfully than the former; twenty-nine (forty-five per cent) fell within the limits prescribed by the *British Pharmacopœia*; eight contained proportions of strychnine varying from 0.110 to 0.118 per cent inclusive; three tinctures were over strength (one grossly so) and the balance of twenty-five (40 per cent) proved to be decidedly weak, some falling as low as 50 per cent of the official requirements. Of the forty-one liquid extracts, only nine (twenty-two per cent) could be classified as B.P.; five came within 10 per cent below the official standard; one was appreciably stronger than it should be; and no fewer than 63 per cent were much too low. In these samples, the products of all the leading Canadian drug houses are represented. The results of the investigation are set forth in the enclosed tables:—

The fact that the standard for liquid extract of nux vomica in the *British Pharmacopœia*, and that for fluid extract of nux vomica in the ninth revision of that of the United States[5] do not coincide; and that the expression "F. E. Nux Vomica" is used indiscriminately in this country to describe both, may, in many cases, have led to the creeping in of error in the preparation of tincture. Thus a tincture prepared by diluting American fluid extract with eleven volumes of 70 per cent alcohol would not be of B.P. strength, seeing that the extract would contain 2.5 per cent of total alkaloids and not 1.5 per cent of strychnine. Further, seeing that the extract has not been deprived of natural fat, such a tincture is liable to be cloudy and to deposit on keeping.

One noticeable feature in the samples was the lack of uniformity in colour and appearance of products presumed to have been manufactured under strictly defined conditions. Not only were there divergences between samples from different houses, but also between different batches from the same source. Some difference there always will be for the raw material is the product of Nature's workshop, and, in a pharmaceutical factory, there are never enough different batches available to make blending possible. Dyes could be employed to secure uniformity, but there are many objections to their use and so far as galenical pharmacy is concerned, as a rule, they may be regarded as the refuge of the unscrupulous.

Some of our liquid extracts were of medium brown colour and quite brilliant, whilst others were dark and cloudy and in some instances even thick, and turbid. The tinctures naturally varied in accordance with the material from which they were made. The appearance of a pharmaceutical preparation is by no means an infallible guide as to its excellence, yet it will readily be conceded that the man who takes a pride in the elegance of his products will most likely bestow equal care in their preparation and see to it that he is in a position to guarantee their virtue from his own knowledge.

Perhaps the most striking feature presented by the results is the enormous amount of variation in the toxicity of preparations, the potency of which can be determined with a fair degree of accuracy by a straightford chemical assay, for which explicit directions are given in the *Pharmacopœia*. These results will certainly come as a surprise to physicians, pharmacists and the general public alike. The divergence is not only much too great to be explained away on the grounds of experimental error or technique; indeed, it is confusing and misleading to the physician and a menace to the public safety.

Over thirty years ago, Farr and Wright[6] made a similar, but much less extensive survey of tincture of nux vomica in England, and reported among a dozen samples a difference of from 0.144 to 0.224 per cent of total alkaloids as compared with a then-existing standard of 0.23 per cent. In 1902, following the advent of a new edition

TABLE A

LIQUID EXTRACT OF NUX VOMICA

No.	Labelling	Appearance	Total percentage of Alkaloids	Strychnine percentage	Percentage discrepancy from B.P.	Remarks
1.	F. E. Nux Vomica.....	Cloudy: deposit	2.63	1.22	−18.7	Pass as U.S.P. IX.
2.	Fl. Ext. Nux Vomica, B.P. 1914.....	Very good	2.83	1.43	−4.7	Pass as B.P. 1914.
3.	Fl. Ext. Nux Vomica...	Satisfactory	3.01	1.23	−18.0	Neither B.P. nor U.S.P. IX
4.	Fl. Ext. Nux Vomica...	Good, but rather pale	2.15	0.83	−44.7	Poor.
5.	Ext. Fl. Noix Vomique..	Fair, but cloudy	3.00	1.49	–	B.P. 1914.
6.	Ext. Fl. Noix Vomique..	Turbid	2.00	0.90	−40.0	Poor.
7.	Fl. Ext. Nux Vomica, B.P.....	Satisfactory	2.86	1.45	–	B.P. 1914.
8.	Fl. Ext. Nux Vomica...	Satisfactory	3.44	1.44	−4.0	Pass as B.P. 1914.
9.	Fl. Ext. Nux Vomica...	Turbid	2.88	1.45	–	B.P. 1914.
10.	Liq. Ext. Nux Vomica..	Satisfactory	2.88	1.27	−15.3	Neither B.P. nor U.S.P. IX.
11.	F. E. Nux Vomica.....	Dull	2.00	1.00	−33.3	Weak.
12.	Liq. Ext. Nux Vomica..	Good	3.15	1.36	− 9.3	Neither B.P. nor U.S.P. IX.
13.	F. Ext. Nux Vomica	Good	2.81	1.39	− 7.3	Neither B.P. nor U.S.P. IX.
14.	Fld. Ext. Nux Vom....	Turbid: deposit	2.86	1.25	−16.7	Neither B.P. nor U.S.P. IX.
15.	Liq. Ext. Nux Vomica B.P. 1914.....	Good	2.64	1.51	–	B.P. 1914
16.	F. E. Nux Vomica.....	Turbid: deposit	2.55	1.14	−24.0	Pass as U.S.P. IX.
17.	Liq. Ext. Nux Vomica..	Satisfactory	2.75	1.31	−12.7	Neither B.P. nor U.S.P. IX.
18.	F. E. Nux Vomica.....	Good	2.49	1.16	−22.7	Pass as U.S.P. IX.
19.	Liq. Ext. Nux Vomica..	Satisfactory	2.65	1.44	− 4.0	Pass as B.P. 1914.
20.	F. E. Nux Vomica.....	Satisfactory	3.41	1.45	–	B.P. 1914.
21.	Fl. Ext. Nux Vom.....	Turbid	2.54	1.26	−16.0	Pass as U.S.P. IX.
22.	Fl. Ext. Nux Vomica...	Good	3.88	1.73	+15.3	Overstrength.
23.	F. E. Nux Vomica.....	Good	3.27	1.38	− 8.0	cf. No. 12.
24.	F. E. Nux Vomica.....	Satisfactory	3.26	1.46	–	B.P. 1914.
25.	F. E. Nux Vom.....	Satisfactory	2.97	1.30	−13.3	Neither B.P. nor U.S.P. IX.
26.	Fl. Ext. Nux Vomica...	Turbid	1.42	0.61	−59.3	cf. tincture No. 38.
27.	Fl. Ext. Nux Vomica...	Satisfactory	2.76	1.28	−14.7	Neither B.P. nor U.S.P. IX.
28.	Fl. Ext. Nux Vomica...	Good	2.64	1.23	−18.0	Pass as U.S.P. IX.
29.	Fl. Ext. Nux Vomica...	Good	3.07	1.41	− 6.0	Slightly low.
30.	Fl. Ext. Nux Vomica, B.P.....	Slightly turbid	2.61	1.22	−18.7	Pass as U.S.P. IX.
31.	Liq. Ext. Nux Vomica, B.P. 1914.....	Turbid	2.60	1.15	−23.3	Pass as U.S.P. IX.
32.	Fl. Ext. Nux Vomica....	Slightly turbid: pale	2.01	0.86	−42.7	Very poor.
33.	Ext. Fl. Noix Vomique 1.5% Strychnos Nux Vomica.....	Pale	1.54	0.78	−48.0	Specification a little vague. 1.5% total alkaloid?
34.	Ex. Nux Vomica.....	Turbid	1.40	0.58	−61.3	Very poor stuff.
35.	Ex. Nux Vom.....	Very dark	2.51	1.24	−17.3	Pass as U.S.P. IX.
36.	Liq. Ext. Nux Vom.....	Dark, bright	2.93	1.20	−20.0	Neither B.P. nor U.S.P. IX.
37.	Ext. Fl. Nux Vom.....	Pale, clear	1.09	0.54	−64.0	Very poor stuff.
38.	Ext. Fl. Noix Vomique..	Pale, bright	2.19	1.03	−31.3	Decidedly weak.
39.	Fl. Ext. Nux Vomica, B. P. 1898 assayed. Standard 1.5% Strychnia.....	Turbid: heavy deposit	2.10 2.16 (*a*)	1.07 1.09 (*a*) 1.20 (*b*)	−28.7 −27.3 (*a*) −20.0 (*b*)	Decidedly weak. Includes deposit. 1898 method.
40.	Liq. Ext. Nux Vomica, B.P. 1914 Assayed....	Slight deposit Satisfactory	3.29	1.42	− 5.3	Slightly low.
41.	Liq. Ext. Nux Vomica, B.P. standardized..	Satisfactory	3.02	1.25	−16.7	Neither B.P. nor U.S.P. IX.

TABLE B

TINCTURE OF NUX VOMICA

No.	Labelling	Appearance	Total percentage of Alkaloids	Strychnine percentage	Percentage discrepancy from B.P.	Remarks
1.	Tinct. Nux Vomica.....	Satisfactory	0.245	0.127	–	B.P. and U.S.P.
2.	Tr. Nux Vomica, B.P. 14.....	Rather pale	0.213	0.106	-15.2	
3.	Tinct. Nux Vomica, B.P. 1914.....	Rather pale	0.213	0.106	-15.2	cf. No. 2.
4.	Tr. Noix Vomique.....	Satisfactory	0.211	0.084	-32.8	Decidedly weak.
5.	Tr. Nux Vomica.....	Satisfactory	0.242	0.100	-20.0	Pass as U.S.P.
6.	Tr. Noix Vomique.....	Satisfactory	0.245	0.110	-12.0	Pass as U.S.P.
7.	Tr. Nux Vomica.....	Pale	0.184	0.092	-26.2	Decidedly weak.
8.	Tr. Noix Vomique.....	Satisfactory	0.267	0.118	- 5.6	Slightly weak.
9.	Tr. Noix Vomique.....	Satisfactory	0.216	0.113	- 9.6	
10.	Tr. Noix Vomique.....	Satisfactory	0.281	0.108	-13.6	
11.	Tinct. Nux Vomica.....	Satisfactory	0.292	0.119	- 4.8	Pass as B.P.
12.	Tr. Nux Vomica, B.P. 1914.....	Satisfactory	0.271	0.117	- 6.4	
13.	Tr. Nux Vomica.....	Satisfactory	0.279	0.121	–	B.P. 1914.
14.	Tr. Nux Vomica, B.P. 1914.....	Slightly cloudy; deposit	0.247	0.126	–	B.P. 1914.
15.	Tr. Nux Vomica, B.P...	Very pale	0.178	0.086	-36.0	Decidedly weak.
16.	Tr. Nux Vomica, B.P...	Satisfactory	0.285	0.130	–	B.P. 1914.
17.	Tr. Nux Vomica.....	Very pale	0.131	0.068	-45.6	Very poor.
18.	Tr. Nux Vomica.....	Slightly pale	0.195	0.095	-24.0	Decidedly weak.
19.	Tr. Nux Vomica.....	Dark and turbid Chloroform extd. a purple dye which turned orange with acid (cochineal?)	0.251	0.123	–	B.P. 1914: but contains foreign matter.
20.	Tr. Nux Vomica.....	Turbid	0.285	0.113	- 9.6	
21.	Tr. Nux Vomica.....	Fair: deposit	0.273	0.125	–	B.P. 1914.
22.	Tr. Nux Vomica.....	Satisfactory	0.411	0.189	+56.0	Error in dilution.
23.	Tr. Nucis Vomica.....	Very good	0.215	0.116	- 7.2	Slightly weak.
24.	Tr. Nux Vomica.....	Satisfactory: slight deposit	0.244	0.126	–	B.P. 1914.
25.	Tincture of Nux Vomica	Fair	0.291	0.129	–	B.P. 1914.
26.	Tincture of Nux Vomica	Deposit	0.241	0.126	–	B.P. 1914.
27.	Tincture Nux Vomica, B.P. 1914.....	Satisfactory	0.287	0.117	- 6.2	Slightly weak.
28.	Tinctura Nucis Vomicæ, B.P. 1914.....	Satisfactory	0.196	0.107	-14.4	
29.	Tincture Nux Vomica, B.P. 1914.....	Very good	0.230	0.131	+4.8	Pass as B.P. 1914.
30.	Tr. Nux Vomica.....	Dark and turbid	0.280	0.125	–	B.P. 1914.
31.	Tr. Nux Vomica.....	Rather pale; slightly opalescent	0.173	0.092	-26.4	Decidedly weak
32.	Tr. Nux Vomica.....	Turbid	0.265	0.119	- 4.8	Pass as B.P. 1914.
33.	Tr. Nux Vomica.....	Satisfactory	0.205	0.121	–	B.P. 1914.
34.	Tincture Nux Vom.....	Satisfactory	0.228	0.123	–	B.P. 1914
35.	Tr. Nux Vomica.....	Turbid	0.260	0.126	–	B.P. 1914.
36.	Tr. Nux Vomica.....	Satisfactory	0.245	0.099	-20.8	Pass as U.S.P.
37.	Tr. Nux Vomica, B.P...	Satisfactory	0.306	0.120	–	B.P. 1914.
38.	Tr. Nux Vomica.....	Dark and turbid	1.348	0.633	+406.4	cf. Liq. Ext. No. 26.
39.	Nux Vomica.....	Satisfactory	0.281	0.128	–	B.P. 1914.
40.	Tincture Nux Vomica, B.P. Standard 0.125% Strychnine.....	Satisfactory	0.272	0.129	–	B.P. 1914.
41.	Tr. Nux Vom., B.P.....	Satisfactory	0.227	0.123	–	B.P. 1914.
42.	Tinct. Nux Vomica.....	Satisfactory	0.271	0.127	–	B.P. 1914.
43.	Tr. Nux Vomica.....	Satisfactory	0.223	0.129	–	B.P. 1914.
44.	Tincture Nux Vomica..	Slightly pale	0.199	0.106	-15.2	
45.	Tr. Nux Vomica, B.P...	Good	0.224	0.101	-19.2	
46.	Tr. Nux Vom.....	Very pale	0.137	0.069	-44.8	Very poor.
47.	Tr. Nux Vomica, B.P. 14.....	Satisfactory	0.221	0.098	-21.6	Decidedly weak.
48.	Tr. Nux Vom, B.P. 1914	Slightly turbid	0.268	0.121	–	B.P. 1914.
49.	Tr. Nux Vomica.....	Pale: deposit	0.195	0.109	-12.8	
50.	Tinct. Nucis Vomica, B.P. 1914.....	Satisfactory	0.257	0.127	–	B.P. 1914.
51.	Tinct. Nux Vomica....	Satisfactory	0.301	0.135	+8.0	
52.	Tr. Nux Vomica, 1914..	Pale	0.192	0.107	-14.4	
53.	Tincture Nux Vom.....	Slightly turbid	0.256	0.116	- 7.2	Pass as U.S.P.
54.	Tinct. Nux Vomica, B.P. 1914.....	Bright; dark	0.197	0.098	-21.6	Decidedly weak.

TABLE B—(*Continued*)
TINCTURE OF NUX VOMICA

No.	*Labelling*	*Appearance*	*Total percentage of Alkaloids*	*Strychnine percentage*	*Percentage discrepancy from B.P.*	*Remarks*
55.	Tr. Nux Vomica.....	Pale	0.266	0.107	−14.4	Pass as U.S.P.
56.	Tr. Nux Vomica.....	Pale	0.280	0.107	−14.4	
57.	Tr. Nux Vomica.....	Good	0.267	0.122	–	B.P. 1914.
58.	Tincture Nux Vomica, B.P. 1914.....	Good	0.263	0.125	–	B.P. 1914.
59.	Tinct. Nux Vomica, B.P. 1914.....	Turbid	0.268	0.126	–	B.P. 1914.
60.	Tr. Nux Vomica.....	Satisfactory	0.235	0.121	–	B.P. 1914.
61.	Tincture Nux Vomica..	Satisfactory	0.207	0.081	−35.2	Very poor.
62.	Tinct. Nucis Vomicae...	Satisfactory	0.235	0.120	–	B.P. 1914.
63.	Tr. Nux Vomica.....	Good	0.255	0.104	−16.8	Pass as U.S.P
64.	Tr. Noix Vomique B.P..	Good	0.230	0.120	–	B.P. 1914.
65.	Tr. Nux Vomica.....	Pale	0.205	0.076	−39.2	Very poor.

of the *Pharmacopœia,* they repeated their work,[7] finding among ten specimens a variation between 0.160 and 0.252 per cent of strychnine, the standard having been altered to 0.25 per cent of that alkaloid. It will be seen that in neither investigation did the maximum divergence exceed 60 per cent.

Among our liquid extracts, figures are to be found as low as 0.54 per cent and as high as 1.73 per cent of strychnine, a range of over 300 per cent. In the case of the tinctures, it is even greater. The weakest contained only 0.068 per cent of strychnine, whilst the strongest, with 0.633 per cent, proved over five times as rich in that alkaloid as it should be and over nine times as potent as the poorest specimen. It is interesting to observe the similarity in the strength of this preparation (tincture No. 38) and the liquid extract No. 26, especially when one considers that both originated from the same manufacturer. Perhaps the tincture was wrongly labelled; but the fact remains that the liquid extract was only some 40 per cent of the correct strength.

Another sample from the same house (liquid extract No. 39) bore a label marked "B.P. 1898." In addition to the usual assay, that official in the 1898 *Pharmacopœia* was also carried out. The results were appreciably higher, but still substantially below the prescribed standard and the strychnine in this case was contaminated with traces of brucine. As the bottle contained a heavy deposit, it was thought of sufficient interest to determine the alkaloids in the shaken up mixture, to ascertain whether there were any adsorption of alkaloid by the deposit, for a careful pharmacist will, from time to time, filter such preparations so that they may be bright when dispensed. Whilst the results seemed to lend colour to this hypothesis, yet the figures did not vary sufficiently widely to permit of definite conclusions being drawn. It does, however, seem surprising that preparations of nux vomica, a drug so generally used, should still be extant for over twelve years in a pharmacy in one of our leading Canadian cities.

If preparations do lie about so long in retail drug stores, one will naturally wonder whether the falling off in strength is the result of deterioration. This point has been studied by Naylor and Huxtable[8] who kept under observation samples of standard liquid extract of nux vomica for nine months under conditions obtaining in the average pharmacy and checked them every month. At the end of the period, the greatest falling off in the amount of strychnine was from 1.50 to 1.48 per cent, a variation well within the *Pharmacopœial* limits. This seems to indicate that when these preparations are correctly made and stored under reasonable conditions, there is little fear of deterioration.

Undoubtedly it is the duty of both manufacturers and dispensers to pay greater attention to the quality of such potent drugs.

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ABDOMINAL EXAMINATION AT TERM*

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WHEN making an abdominal examination at term, let the patient be fully extended on her back and, standing on her right side, place the warmed left hand on the part of the child nearest to the patient's sternum and press in the direction of her symphysis pubis along a line parallel with her body. This will arch the child's back out within reach of palpation and auscultation. Note that one side of the fundus uteri may be distended by the placenta and lie at a higher level than the upper part of the child, which occupies the other side of the fundus. While keeping the child fixed thus, press with the fingers of the other hand on either side below the umbilicus. The back will be indicated by a feeling of greater resistance over it, as well as by the fact that pressure on it, moves the child under the fixing hand, as pressure on the other side does not. Fœtal small parts will be felt on the opposite side.

Bearing in mind the fact that the fœtal heart in utero is usually best heard over the child's back, place the bell of the stethoscope where the back is most clearly palpable. Many men apply the stethoscope by means of an elastic band around the bell, a method which gets rid of creaking sounds caused by the firm grasp of the fingers on the bell. But it needs two hands and therefore involves releasing the fixation and allowing the child's back to recede from the abdominal wall and in so doing the heart becomes less audible. Remember that in R.O.P. positions the heart is sometimes inaudible, but is generally heard far out in the right flank and may at times be heard at a point usually indicating the L.O.A. position. This may lead to an error in diagnosis and the application of forceps to a head in a R.O.P. position and consequent disaster.

To determine the position of a child fix the child with left hand and make a sliding palpation along the centre of the back upwards to the left hand, and downwards to the symphysis. Towards one or other extremity, you will come to a soft spot and resistance again beyond it. This corresponds to the space between the shoulders and the occiput — "the sulcus of the neck." If it be towards the upper end of the abdomen, a breech presentation is shown; if towards the lower, a vertex. Your findings will be confirmed if you can move the head about without moving the body. I have found this sign more frequently present with the head at the lower than at the upper pole. The head at the fundus is often strongly flexed and the sulcus thus flattened out. The fixing hand may then be placed in error on the shoulders and the sulcus missed. In vertex presentations the head may be well down in the pelvis and the sulcus be missed. On auscultation, heart sounds above the umbilicus generally mean a breech presentation and below it a vertex, but when the head is floating freely above the brim, the heart may be heard quite high up.

The consistency and shape of the upper and lower ends of the fœtus may be tested by pressing them between the fingers of the two hands. The head is harder and its shape may be appreciated. The sacral side of the breech is hard and the other soft. This is sometimes simulated by a head when the placenta intervenes to give a soft feel to one side. On pressing the finger tips of the two hands downwards into the pelvis on either side of the head, the fingers will descend further past the occiput, and thus aid in locating the back. In Pawlic's grip only one hand is used. The thumb and forefinger are widely spread and placed in the sulci above Poupart's ligament. Then pushing slightly upwards under the abdominal fat, the same signs may be detected as by the bi-manual method. Fixation of the presenting part is determined either bimanually or by Pawlic's grip. It is necessary to distinguish clearly between immobility, and engagement of the head in the brim. The head may be fixed, or rendered immovable by being

* Read before the Section of Obstetrics and Gynæcology, Academy of Medicine, Toronto, April 7, 1927.

pressed against the brim long before its diameters have engaged in the strait. The engagement of the head is tested by inserting two fingers of the right hand in the vagina whilst the thumb is pressed against the abdomen above the symphysis. The head is then pressed downwards and backwards in the direction of the inlet of the pelvis by the left hand. The fingers in the vagina estimate the degree of descent, and with the thumb, one estimates whether the head overlaps the symphysis. This examination enables us to estimate not only actual but possible engagement, and is our main reliance in estimating contraction of the pelvis. In multiparæ the head does not usually engage until the commencement of the second stage of labour. In primiparæ, if the head be in the L.O.A. position, it usually engages a week or ten days ahead of the time of expected delivery, and failure to do so makes us suspect contraction of the pelvis. In posterior positions the head will often not engage until well on in the second stage, even in primiparæ.

The maternal heart sounds are often audible over the uterus and, if feeble and rapid, may be mistaken for fœtal heart sounds. To avoid this error compare them with the maternal radial pulse. A throbbing bruit, whose throbs synchronize with the maternal heart beats, is often heard. This is called the uterine souffle and, sometimes erroneously the placenta bruit, for its site does not indicate the placental site; nor is placenta prævia always accompanied by a bruit in the lower uterine segment. A harsh and circumscribed bruit is occasionally heard over the placenta, and is an aid to locating it, but in my experience this is rare. A bruit known as the funic souffle sometimes replaces the fœtal heart sounds. It is supposed to be due to pressure on the cord, and to spell danger to the child. One occasionally hears, now the bruit, and now the heart sound, at the same examination. I suppose this means intermittent pressure, and serious significance could be attached only to a permanent condition, such as a knot in the cord. In occipito-posterior positions, the progress of rotation is often indicated by a change in the position of the heart sounds from the flank, to a position closer to the median line.

In endeavouring to estimate the condition of the child by listening to its heart, one must remember that, when little or no liquor amnii is present, each uterine contraction may obliterate the sound temporarily and the heart sounds are apt to be slow and irregular for half a minute or more while the contraction is passing off. Only continuous slowness and irregularity or extreme rapidity signifies danger. The death of child should not be hurriedly diagnosed on disappearance of heart sounds. They do disappear mysteriously for a time.

At the end of the fourth month the fundus uteri is usually slightly above and to the right side of the symphysis. At the end of the sixth month, it is on a level with the upper edge of the umbilicus. At eight and a half months it reaches its greatest height, usually touching the xiphoid. At the eighth and ninth month the height of the fundus is the same, being lower than at the eight and a half level, but the contour of the abdominal protuberance differs. As the woman stands up, the slope from fundus towards xiphoid is even and regular, while, at the ninth there is a sharp inward dip—the fundus hangs forward more. At the eighth month, too, the child feels smaller.

Twins may sometimes be detected by feeling two heads. Sometimes heart sounds of different rates may be heard in different sites, but remember that a child may move and its heart rate increase under manipulation. Often twins are accompanied by hydramnios, and in any event the distension may be so great and the uterus so tense as to make the diagnosis obscure and only a matter of inference. In face presentation, the small parts of the child are felt, and the fœtal heart sounds heard, on the same side. The head is seldom in the pelvis till late in labour, and the unusual tumour it produces, usually makes the diagnosis easy.

Fibroids give to the uterus an irregular outline. They do not vary in consistency with uterine contractions and relaxations. Asymetrical contractions of the uterus sometimes simulate fibroids, but they vary with uterine contractions.

Hydrocephalus may occasionally be made out, but is usually obscured by accompanying hydramnios.

MEDICAL CREDULITY AND PROPRIETARY MEDICINES

By M. Irving Sparks, M.A., M.B.

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A RECENTLY introduced proprietary which has been extensively advertised attracts attention again to the inability of the present practitioner to suitably flavour and make palatable his medicaments. This American proprietary on its boxes contains a statement of its ingredients which are said to be bismuth subnitrate, magnesium carbonate, sodium bicarbonate, carica papaya, diastase and oil of peppermint. It is a light white powder with a pleasant odour and taste, largely due to the oil of peppermint. It was introduced as an antacid and is undoubtedly useful, but its cost is relatively very high.

It has been recently subjected to a quantitative analysis in this laboratory, and in the samples examined the amount of bismuth was found to be small; indeed, present in traces only.

Carica papaya contains a protein digestive ferment, but in a rough test with Metts tubes a digestive action could not be detected. The amount of diastase in 100 grm. of the powder appeared to be about equal to 0.2 grm. of pancreatic diastase. In cases of heart burn it is well known that bicarbonate or carbonate will give relief, and it is probably an advantage to combine them with a carminative such as oil of peppermint. Whether there is any advantage in these cases in providing a diastatic ferment seems extremely doubtful, and there would seem little advantage in supplying a protein ferment as it is well known that the gastric juice is rarely poor in pepsin and that digestion appears to proceed normally, even in those cases in which there is no hydrochloric acid, and in which the pepsin is consequently not an effective digestant. Certainly the beneficial effects could be obtained without the presence of digestive ferments at all, as every practitioner knows. What advantages then, has such a proprietary over a much more simple preparation? We believe that in ordinary practice it would be found that adequate effects could be produced by a mixture of magnesium carbonate and sodium bicarbonate in equal parts; the proportions in this preparation are about ten to twelve, flavoured with a minim of oil of peppermint, or even a little less, for an ounce of powder. Any dispenser can readily rub either of these powders in a mortar with oil of peppermint and distribute the oil throughout the mixture. It appears that the proprietors are trading on the credulity of the medical profession, when they suggest that the addition of digestive ferments and traces of bismuth carbonate makes this preparation of value in such cases as those of diabetes, pregnancy, uræmia, fevers, cyclic vomiting, after surgical operation, pneumonia, dermatoses, rheumatism, migraine, post-anæsthesia vomiting, and gastro-intestinal diseases, as is alleged on the slips accompanying the samples of the preparation sent to physicians. One wondered whether the medical profession was sufficiently credulous to accept it at its face value, or to use it at all, when a simple prescription such as any physician should be able to write would be equally effective, until one found this proprietary on the shelves of the dispensary of a large general hospital, obtained at a cost of approximately fifty cents an ounce for the benefit of private patients. Evidently some members of the medical profession at all events are impressed by the claims made for it, and prefer using it to writing a prescription such as that suggested above, the materials for which would cost approximately three cents.

TORSION OF THE WHOLE MESENTERY IN AN INFANT: VOLVULUS NEONATORUM

By O. W. Niemeier, M.B., F.R.C.S. (Edin.)

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THE publication of the following case of torsion of the whole mesentery appears justified, owing to the extreme rarity of the condition, and further because of certain features of special interest in the case. I wish to acknowledge my indebtedness to Dr. W. D. Ferguson, who kindly referred the case.

Baby T., an apparently normal male child, weighing 8 pounds 6 ounces, was born on July 27, 1925, by low forceps. On the second day the child began vomiting, the material vomited being of a greenish colour. It had a meconium stool on the first day but after the second day the stools showed no trace of food or bile. On the 4th day the vomited matter became bloody, and on the fifth day a pædiatrician, Dr. Boone, in consultation, gave the baby a transfusion, suspecting a hæmorrhagic condition. On the sixth day I saw the baby and performed laparotomy, after again transfusing him.

Operation.—An upper right rectus incision was made. The stomach and duodenum were found distended, but the rest of the intestine was collapsed. At the duodeno-jejunal junction there was obviously a band or twist causing obstruction. The remainder of the bowel was convoluted into a mass resembling large fish worms and could be lifted right out of the abdomen, like a bunch of grapes. It did not nearly fill the abdomen. The transverse colon and cæcum were included in the mass and had no attachment to the posterior abdominal wall. The mesentery was twisted at its origin, there being three turns from right to left in a clockwise direction. This was untwisted, and almost immediately the upper coils of small intestine became normally distended. The intestines were returned to the abdomen, a few ounces of saline were introduced and the abdomen closed.

The day after the operation the vomiting ceased and the babe had a bowel movement, which showed bile and curds. The next day (eighth day of life) vomiting recurred, and continued until the child died on the 11th day, August 7, 1925.

Post Mortem Findings.—The intestine was all normally distended, and the twist had not recurred. The duodenum was very much distended and the second portion showed a gangrenous area one and a half inches in diameter over its convexity. There was no attachment of the colon to the posterior abdominal wall. The third part of duodenum appeared to be more mobile than normal.

Discussion

The infrequency of this condition is indicated by the fact that in a review of the literature by Weible[1] in 1914, only 67 cases had been reported up to that time. Garrow[2] reported a case in 1917, seen at autopsy. Wise[3] reported a case in 1920 with recovery following operation. Nario[4] cited a case in 1921, and in 1925 Cutler and Merriam[5] reported a case in an infant due to a cyst of the mesentery. More recently Dott,[6] of Edinburgh, reported a case in an infant with recovery following operation.

The following table compiled by Weible[1] shows the age incidence:—

Up to 10 years	.....	10	cases
Up to 20 "	.....	7	"
Up to 30 "	.....	13	"
Up to 40 "	.....	4	"
Up to 50 "	.....	8	"
Up to 60 "	.....	10	"
After 60 "	.....	8	"

The male sex is peculiarly predisposed, about 80 per cent being males. Dott's case was a female infant, eight days old.

The etiology of the condition is dependent on certain embryological and anatomical abnormalities. In the third fœtal month the duodenum has a mesentery and the colon has not undergone rotation, the whole intestine being suspended by a continuous mesentery. After the fifth fœtal month the colon has rotated and acquired its attachments to the posterior abdominal wall. In practically all the new-born cases and many of the older ones, this fœtal condition persists, in which the colon had failed to rotate and acquire its attachment to the posterior parietes. The whole intestine hangs suspended by its mesentery as a pedicle and this condition, undoubtedly, predisposes to torsion.

Anatomically the mesentery is attached normally from a point on the left of the second lumbar vertebra, along a line extending diagonally into the right iliac fossa to a point opposite the right sacro-iliac joint. This attachment is shortened in length and lies more horizontally, being diminished in its vertical extent in many of the cases, which have undergone torsion. Undoubtedly this anatomical

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variation is also a predisposing factor in the causation of torsion. The mesentery in some cases is described as being elongated. Many other ætiological factors have been described, such as trauma, strain, prolonged intestinal stasis, hernia and violent peristalsis. In the new-born it is probably the initial peristaltic movements, which, combined with the congenital abnormalities mentioned above, bring about the onset. The possible rôle of pituitrin in initiating this condition, when associated with the proper anatomical and embryological factors, might be worth investigation. It was not used in the case here reported.

The twist is usually from right to left (clockwise) and while obstruction may occur with only a 90 degree twist, rotation of 180 degrees is usually present, and two cases with 720 degrees of torsion, have been reported. The obstruction depends on the tightness of the twist rather than the extent of the torsion, and the obstruction of the mesenteric vessels plays a prominent rôle in the outcome of the case.

The clinical features are such that a diagnosis of obstruction should be possible even in the new-born. The persistent vomiting with bile in the vomitus, the absence of stools, (except possibly the first day), and the absence of bile in the stools, obtained by enema, are most important and point to an obstruction below the ampulla. In the older cases pain is a prominent symptom. Distension of the upper abdomen may be present with flattening of lower abdomen. This was present in Dott's case, but not in our case. There might conceivably be visible peristalsis but it was not noted in the present case. There may be bloody stools as reported in many cases. The bloody vomitus in the case here reported was the cause of some delay by causing a diagnosis of hæmorrhagic disease to be made. I can find no reference to this symptom in any of the other reported cases and it might have been due to the accidental rupture of a vessel, owing to the severity of the vomiting, or it may have been due to a thrombosis in the duodenum, which would also account for the gangrenous area found at post-mortem.

I feel that if this condition is borne in mind, as a cause of obstruction in the new-born, it may be possible to diagnose the trouble, and save the patient by early operation, as Dott succeeded in doing, but, which we were, unfortunately, too late to accomplish.

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Blood Plasma and Senility.—In his Cavendish Lecture at the West London Medico-Chirurgical Society on May 27th, Dr. Leonard Williams epigrammatically remarked that "senescence, like love, is a story which never grows old," and has taken this opportunity of touching on some old views in the light of modern research in tissue culture, endocrinology, and so forth. Thus attention is called to Dr. Harry Campbell's insistence twenty years ago on the importance of the blood plasma, as contrasted with the more easily investigated corpuscles, in the life, health, and disease of the body. As the plasma is built up from the products of digestion and the internal secretions of the endocrine glands, the tissues, which it bathes and nourishes or poisons, are likely to pay the penalty for dietetic errors and to respond to the stimulus, or remain quiescent in its absence, of the hormones of the ductless glands. On the subject of cookery and food Dr. Leonard Williams follows fairly closely the principles of Metchnikoff, and with a firm but light hand has much to say on "the subtle sins of sloth and gloomy gluttony"; his comment on the treatment of disease, which may result in interference with the saving grace of *vis medicatrix naturæ*, gives us the *obiter dictum* that "in comparison with the ordinary British invalid, the forcibly fed Strasbourg goose is an ascetic." Fasting, he points out, is the simplest and safest of remedies in many, especially metabolic, disorders, but, being devoid of mystery, is far from popular. We remember a sanatorium in America the inmates of which were encouraged to eat nothing for weeks at a time. Rejuvenation is, Dr. Leonard Williams said, the motto of the moment, and surgical measures, such as those of Steinach and Voronoff, are much in the limelight, but they should never be needed if moderation in diet punctuated by fasting were universally practised.

A PRELIMINARY REPORT OF CONVALESCENT SERUM TREATMENT IN WHOOPING COUGH

By H. P. Wright, M.D.

Montreal

FOUR years ago the writer observed Ludwig Meyer successfully control an epidemic of measles in the Weisenhaus in Berlin, and since that time a considerable number of cases exposed to measles have been successfully treated by him with convalescent serum from one of the parents.

On this continent it has been more usual to employ serum than whole blood, but, in private practice it is much easier to do a simple transfusion from one of the parents, provided they have had the disease. Also, it is well to remember that when convalescent blood is used, proportionately larger amounts are required, if the donor has had the disease some years previously.

If seven days have elapsed since the incubation of measles the disease is not preventable, but in many cases it is better to insure a mild attack rather than confer temporary immunity, and it has been my experience that the administration of convalescent serum at any time before development of the symptoms of measles, has always seemed to coincide, to say the least, with a mild attack of the disease. I have always administered the blood subcutaneously, and have never given more than 20 c.c.

In view, then, of the recognized successful prevention of measles by the use of convalescent serum, it was thought that a similar type of treatment might be applicable in whooping cough, and when one considers the mortality and unpleasant features of whooping cough in infancy, any treatment which may help to control the disease should be considered of definite value. Perusal of the literature reveals the fact that there are at least 200 known remedies prescribed for this disease, all having, no doubt, some enthusiastic adherents.

It is generally recognized that the vaccine treatment has proved disappointing; it is possible, however, that further investigation may alter this opinion and by means of the administration of a more effectual preparation in more suitable dosage may secure more successful and less conflicting results than those which have been reported by various observers. The x-ray treatment has certainly been disappointing and investigation does not seem to hold out much chance of the successful control of pertussis by this means. Ether and olive oil have a very definite rôle in the treatment of whooping cough, but this method of therapy is simply attacking the symptoms of the disease and should therefore be regarded under symptomatic treatment.

The ordinary child that develops whooping cough makes, as a rule, a complete recovery after an unpleasant month or six weeks. The young infant, or delicate child, on the other hand, may die from the disease or suffer severe complications which may give rise to a lengthened period of convalescence. It is therefore in this class that the convalescent serum should prove most useful. The following three cases are reported with hesitancy, because of the paucity in numbers, which is accounted for by the fact that when parents learn that some of their blood is to be withdrawn for injection into their child, who has not as yet developed whooping cough, they are not inclined to be in sympathy with the idea and many even deny that they have ever had whooping cough. Also because it is well known that cases of whooping cough vary greatly in their severity, so that the successful treatment of three cases is of inconclusive value. However, an application of this type of treatment by others will enable conclusions to be made, and it is solely on this account that the cases are reported.

Case 1

W. S., aged 5 years, was exposed to whooping cough on January 30, 1927. Two weeks later a slight irritative cough commenced and on February 18th, he coughed six or eight times in 24 hours. This cough was worse at night, and there was a definite spasm with the cough. The physical examination on February 18th, was essentially negative. A white blood count was not made. As the cough did not improve 10 c.c. of whole blood

from the mother was injected on February 20th, subcutaneously into the right posterior aspect of the thorax. The mother reported one week later that the cough had gradually improved and at the end of two weeks that it had entirely disappeared.

CASE 2

C. S., aged 20 months. In April her eldest sister developed definite pertussis. This child and her brother were both contacts and had been coughing for two days. The brother was not transfused, but 8 c.c. of whole blood was withdrawn from the father and injected subcutaneously into the left side of the abdomen of the sister on April 24, 1927. She vomited four times, and the mother stated that she was up with her on one occasion only at night. (The following report from the mother is of interest). "During the first 10 days after the injection of the blood she had some coughing spells in the evening until about 11 p.m., but always slept well after that hour." Two weeks after the injection of the convalescent blood she had practically recovered. Her brother who is 5 years old, contracted the disease at the same time but was not given an injection of the serum. He suffered from a moderately severe attack of whooping cough, and on June 5th, the mother reported that he was still coughing and occasionally vomiting.

CASE 3

P. P., aged 4 years, was exposed to whooping cough at school on April 14th. Two weeks later she developed a slight irritative non-productive cough which was worse at night and spasmodic in character. Physical examination was essentially negative. A white blood count was not made. On May 1st, 10 c.c. of whole blood was withdrawn from the mother and injected subcutaneously into the dorsal region of the thorax. The mother reported that after one week the cough had very definitely improved and disappeared after the second week.

Of these three cases No. 2 can definitely be considered as whooping cough. In the other two, while it cannot be definitely stated that they had contracted whooping cough there was evidence in favour of this disease.

The father of case No. 2 is a well-known surgeon. Both he and his wife are of the opinion that the transfusion was of distinct advantage and to it is attributed the very mild character of the attack from which the baby suffered.

It is theoretically possible that by the early injection of convalescent serum a temporary passive immunity might be produced, but in these three cases no such attempt was made, and it is to be hoped that they all had a sufficiently severe attack to confer lasting immunity.

The convalescent serum was injected as early as possible after the suggestive symptoms developed, and it is therefore hoped that they all suffered from what may be referred to as abortive whooping cough. Further investigation along these lines of treatment will be carried out next winter, and an attempt will be made to obtain convalescent serum from children who have just recovered from the disease.

The advantages of transfusion from one of the parents is obvious in private practice, but if this type of treatment continues to meet with success, a convalescent serum should be obtained in the same way as it is from cases of measles and employed in a similar manner.

The Hæmolytic Agent in Addisonian Anæmia—It is now very generally agreed that achlorhydria is one of the few practically constant features in pernicious or Addisonian anæmia, and a large number of observers believe that a similar gastric condition occurs in subacute combined degeneration of the spinal cord. An increasing body of opinion accepting this view ascribes the severe and progressive anæmia of both diseases to hæmolysis resulting from bacterial infection of the intestine, this infection being secondary to loss of the protection normally provided by the acid gastric juice. Attempts to pass from this hypothesis to the actual demonstration of a specific hæmolytic agent present in the small intestine of such cases have so far failed. It has been shown, with some constancy, that the duodenal contents are less uniformly sterile of achylia gastrica, but the presence of hæmolytic streptococci, though reported in some cases, has been denied in others. The whole subject is fully reviewed by Dr. F. A. Knott in the current issue of *Guy's Hospital Reports* (lxxvii, 1, 1927). Working in conjunction with Dr. J. F. Venables and Dr. A. F. Hurst, this observer has been able to make extensive bacteriological observations on 37 cases of Addisonian anæmia. In about 90 per cent of these he was able to demonstrate the presence in the intestine of hæmolytic strains of bacteria, but he is careful to point out that the infection was not necessarily from sources above the pylorus, and that in many cases the bacteriological strains were predominantly of the fæcal type, particularly *Bacillus coli hæmolyticus* and Gram-positive anaerobes. It is not, as Dr. Knott remarks, necessary to postulate that one and only one organism can be responsible for the hæmolysis so prominent in this disease, and it is quite possible that achlorhydria, by permitting large numbers of living organisms to pass through the stomach into the duodenum, may promote a catarrhal state of the intestinal mucosa which facilitates not only its infection with all kinds of fæcal bacteria but also absorption of whatever toxins these organisms may produce.—*Lancet*, April 2, 1927.

NOTES ON A YOUNG HUMAN ABORTUS

By R. J. Bean, M.Sc.

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THE specimen under discussion originally belonged to the collection of Dr. M. F. Guyer, of the University of Wisconsin. Unfortunately, but few details of the case history are available. The ovum was aborted by a white woman 28 years of age, presumably three weeks after cessation of the menstrual flow. The attending physician recognized the scientific value of such material and proceeded to send the specimen immediately to the university, preserved in 35 per cent alcohol. Thus after a lapse of several hours, the ovum was eventually placed in Lavdowsky's fluid.

Preliminary examination of the ovum included measurements and the making of two camera lucida drawings. One drawing shows the ovum *in toto*, the other shows a section of the chorionic vesicle removed in such a way that the embryonic rudiment is exposed. All this preliminary work was done by Dr. Elizabeth Smith Bean, who subsequently dissected out the embryonic rudiment and prepared serial sagittal sections of the structure.

The chorionic vesicle was well developed, with villi fairly evenly distributed over its outer surface. An area of the chorion which lay just over the body stalk attachment was found to be devoid of villi. This area probably marked the placental portion of the chorion, the villi having been retained by the maternal tissues when the ovum was expelled. Outside measurements of the vesicle including the villi were 27 by 22 by 11 mm., while the inside measurements were 16 by 16 by 10 mm. It is evident that the uterine attachment was very slight for the conceptus was expelled practically intact.

The embryonic rudiment (amnion, yolk sac, body stalk and embryo), appeared as a club shaped mass attached to the chorionic vesicle and surrounded by coagulated magma. This magma was continuous with that which lined the chorionic vesicle and the cavity of the vesicle must be looked upon as representing the primitive, magma-lined exocœlome. Except for the body stalk attachment, the embryonic rudiment hung free within the chorion. The surface of the yolk sac showed a succession of ridges and furrows apparently due to the presence of large vitelline blood vessels. Because of the rather dense coagulum in the region of the amnion, its exact position was uncertain. The greatest length of the rudiment was 8 mm., its greatest diameter 2.5 mm.

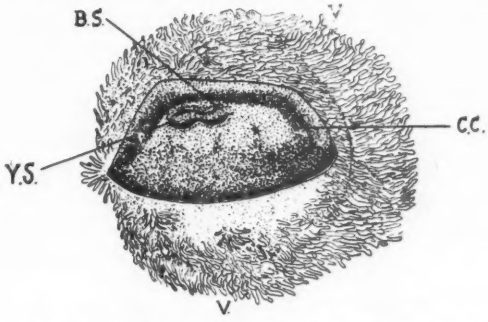

Fig. 1.—Camera lucida drawing of the ovum showing a section of the chorion cut away so as to expose the embryonic rudiment. B.S., body stalk; C.C., cavity of the chorion; V., villi; Y.S. yolk sac.

Examination of the serial sections which are stained with Heidenhain's iron-alum hæmatoxylin, shows the amnion to be very irregular in shape and its walls deeply folded. It is made up of the usual ectodermal and mesodermal layers though the mesoderm is relatively thickened in some regions. The wrinkled wall, plus signs of adhesions in the vicinity of the embryonic anlage, suggests that little if any fluid was present in the amnion at the time of fixation. It is improbable that the sac was ruptured previous to sectioning, but there is a possibility that the fluid contents were partially withdrawn during the dehydration treatment which preceeded paraffin infiltration.

Assuming the age of the ovum to be approximately three weeks, the yolk sac shows precocious development in many respects. Its greatest length is 4.3 mm., its greatest diameter in the sagittal plane is 2.5 mm. A mushroom-like out-pocketing of the umbilical vesicle

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found near its distal extremity gives the structure an asymmetrical contour in this region. In some areas the entodermal and mesodermal layers are clearly defined, in others the wall of the sac appears to consist of blood vessels alone. Some of the individual vessels are so large that they have a diameter nearly one third that of the yolk sac at its narrowest point. Most of the blood vessels are crowded with embryonic corpuscles which exist either as free cells or as members of a large fused aggregate. Possibly these fused masses represent remnants of the original blood islands. In the proximal portion of the umbilical vesicle is a poorly defined coagulum, while in the more distal regions free embryonic blood cells or fused clusters of these elements are commonly found (Fig. 2).

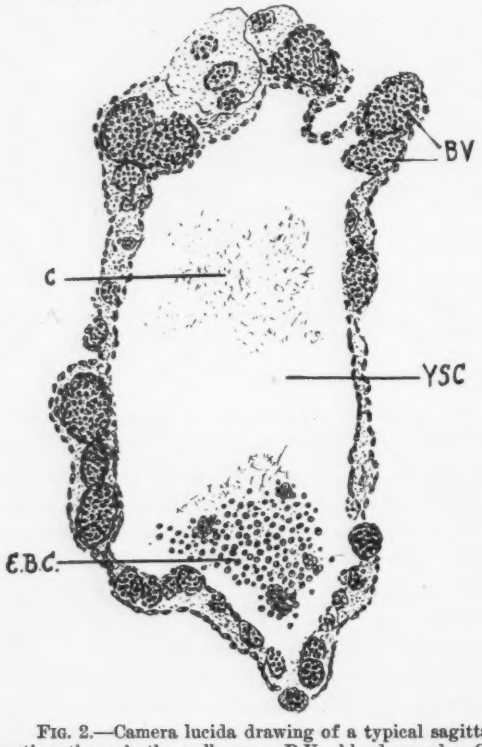

FIG. 2.—Camera lucida drawing of a typical sagittal section through the yolk sac. B.V., blood vessels; C., coagulum within the cavity; E.B.C., embryonic blood cells; Y.S.C., yolk sac cavity.

It may well be admitted that the preparation of this ovum for microscopical study was made with the idea that the material was normal. The discovery therefore, that the embryonic anlage was distinctly abnormal came as a keen disappointment. The embryo lies within a pocket of the amnion which is partly enclosed by the mesoderm of the body stalk. It consists of a thickened rounded mass of cells measuring 0.44 mm. in length (Fig. 3), and 1.5 mm. at its greatest width. There is not the slightest suggestion of any organs in process of formation although vacuolization of some of the centrally located cells has begun. The only positive differentiation of the mass is seen in the distinctly flattened superficial cells. Further description of this embryo would serve no particular purpose. It is sufficient to recognize that the specimen falls into the classification of Mall and Meyer,[1] as a "nodular cyema."

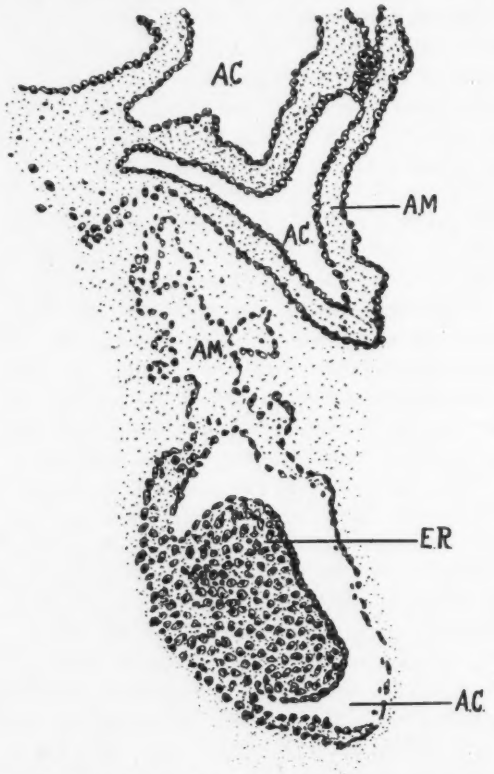

FIG. 3.—Camera lucida drawing of the embryo as seen in a median sagittal section. A. C., amniotic cavity; A.M., wall of the amnion; E.R., embryonic anlage.

Notwithstanding the abnormal features of this case, some very interesting and suggestive inferences may be drawn. It is probable that faulty implantation of the ovum was responsible for maldevelopment and final expulsion of the conceptus from the uterus. Details in the case history which might account for such faulty implantation are unfortunately

lacking. One may safely assume however, that as a result of faulty implantation the oxygen supply to the ovum was deficient and a developmental arrest was thereby effected. Perhaps the most interesting point for consideration is the fact that structural expression of the arrest is practically confined to the embryonic anlage. Difficulties in presenting a plausible explanation of this fact are obvious, nevertheless one is entitled to draw certain conclusions.

It must be remembered that upon the basis of clinical data the conceptus is very young, furthermore the facts of early development of the human ovum are unknown. Presumably the ovum enters the Fallopian tube endowed with sufficient potential energy to complete the segmentation stages which result from fertilization. There is no way of determining the precise effect of fertilization on the metabolism of the human ovum, but it is reasonable to infer that early development is dependent upon successful sperm penetration. Certainly the fertilized ovum within the female reproductive tract is capable of an indefinite but not unlimited degree of independent development. There is no reason to assume that this power of independent growth is reduced to a lethal point at the time of implantation. In fact, the recent work of McIntyre[2] and Bryce[3] draws special attention to the precocious development of the mesoderm in which primitive vascular channels are formed long before umbilical circulation is established. A summary of the evidence which does exist on later development of the human ovum indicates that the power for independent growth becomes gradually diminished with the formation of extra-embryonic structures, namely, the chorion, amnion, and yolk sac. These structures are all closely related to the problem of differentiation of the mesoderm, and in the case of the chorion and yolk sac with the formation of primitive vascular elements derived from the angioblast. In other words, differentiation of the embryo is preceded by the formation of its protective and nutrient membranes.

There exists but little data to indicate just when the embryonic rudiment becomes dependent upon umbilical circulation, but it is clear that when this point is reached imperfect placentation is bound to effect most those structures which are at, or near, their critical moment of origin. If this hypothesis be true, then one would expect structural expression of an arrest to be more pronounced in the embryo than in its membranes.

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Registration Under the Harrison Narcotic Act.—Registration under the Harrison Narcotic Act must be renewed on or before June 30 by physicians desiring to continue to administer, dispense or prescribe narcotics. In registering this year, physicians will receive for the first time the benefit of the reduction in the tax, from $3 to $1. Thus they will save approximately a quarter million dollars through the work of the American Medical Association in securing this reduction. Failure to register carries with it liability to fine and imprisonment, and subjects the tardy registrant to a 25 per cent increase in his tax. A physician desiring the right to distribute, dispense and administer narcotic drugs of all kinds must register in class 4, but a physician who desires the right to dispense the so-called exempt narcotic preparations must register also in class 5. Registration in class 5 is not required of physicians who only prescribe exempt preparations and do not dispense them. A physician registered in class 4 pays no additional tax for registration in class 5, but a physician registering in class 5 pays a tax of $1. The so-called exempt narcotic preparations include such as contain not more than 2 grains of opium, or more than one-fourth grain of morphine, or more than one-eighth grain of heroin, or more than 1 grain of codein, or any salt or derivative of any of them in 1 fluidounce, or, if a solid or semisolid preparation, in 1 avoirdupois ounce; and liniments, ointments or other preparations that are prepared for external use only, except such as contain cocaine, or alpha or beta eucaine, or the salt of, or any synthetic substitute for, any of them. A preparation to be exempt, however, must contain active medicinal drugs other than narcotics. Dilutions of narcotic drugs made by mixing them with inert substances are not within the exempted class.—*J. Am. M. Ass.*

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ELECTROTHERAPY IN SPECIAL CASES

By John Hunter, M.B.

Toronto

THE treatment of the following cases is sufficiently unique to be, at least, interesting and suggestive.

Case 1

Female, aged 37, married, two children 15 and 13 years of age respectively; parents and children healthy. About two years after the birth of second child the patient began to feel more or less pain and discomfort in the rectum, especially when using a sewing machine, riding in street-cars, or over rough roads. The rectal disturbance gave rise to genito-urinary, neuro-vascular dysfunction; premature and increased menstrual flow, frequent and painful urination. Several physicians had made examinations and directed treatment to bladder, uterus or rectum, wherever most distress was felt at the time. Only temporary relief was obtained from the treatments. The patient was examined after a long ride in street-car. The subjective symptoms were as follows: a sensation of discomfort in the rectum, of weight, heat and desire to urinate. Objective symptoms were: a spongy mucous membrane and hyperæmia. Diagnosis: a neuro-vascular disturbance of rectal circulation. *Treatment*: diathermy-electrodes, one in front and one on back, placed to cover lower autonomic ganglia; heat of toleration. Either one of the electrodes was removed after thirty minutes, and a rectal one introduced into the rectum. Treatments were given daily, tri-weekly, and weekly; in all about twenty. *Results*: all rectal and genito-urinary disturbance disappeared, and after the second normal menstruation pregnancy took place, and in due time a large healthy female child was born. Family removed from city, but six months later a card was received saying mother and babe were in excellent health.

Case 2

Female of middle age, splendid physique, cultured, holds responsible position, suffering from diplopia. There was no evidence to indicate any cause of reflex trouble, psychic or endocrine. She had sought advice of four competent ophthalmologists during preceding four years without avail. Physiologists tell us that one function of the para-autonomic system is to posture the muscles. Treatment was founded on the theory that dysfunction of the thoracic ganglia was the cause of the diplopia. Diathermy was used. Electrodes were placed on front and back of chest so as to include these ganglia. Patient felt relief after first treatment. Some twenty treatments were given daily, tri-weekly, and weekly. Vision has remained normal. She was presented at a meeting of the section of ophthalmology of the Toronto Academy of Medicine.

Case 3

Impending gangrene. Female aged 72, tall, thin, and easily fatigued, with marked arteriosclerosis; circulation most impaired in left foot. The toes on this foot were cold, swollen, purplish-red with deep fissures on the under surface of each and very painful when pressed upon. Attention had been directed to the toes three years previously . The morbid process had slowly increased despite any treatment used. Amputation at the ankle was suggested as the only means of relief. Autocondensation was used to reduce blood pressure, followed by diathermy to dilate the capillary system in the foot. An electrode was submerged in a saline solution and the foot placed on it. The position of the other electrode varied from the calf of the leg to upper part of the spine; heat of toleration. Treatment has been continued for six months daily, tri-weekly, and weekly. Pain was promptly relieved; the fissures were healed within one month. Normal physiological conditions were sufficiently restored to enable the patient to wear a shoe, and to walk comfortably. Sleeps well and enjoys her food.

CASE 4

Male, aged 65, moulder. Chronic interstitial pneumonia, (moulder's phthisis). Healthy until three years ago. The early symptoms noted were thirst, fever, increased expectoration, cough, dyspnœa, and loss of weight. More recently all these symptoms became increased. He lost forty pounds in weight and suffered from anorexia, insomnia, and frequent and painful urination. The patient was seen in bed March 14, 1927, with the signs and symptoms of advanced stonecutter's phthisis; bilateral. I explained to him the meaning of diathermy, and suggested the possibility of the heat relieving the cough, and the distress of breathing caused by dilatation of bronchial tubes and air cells, and that the heat would probably completely relieve the bladder irritation. He had to urinate very frequently day and night. He was brought to the office on the morning of the 15th, and diathermy given to chest and pelvis twenty minutes each, with heat of toleration. As soon as he felt the heat he breathed easier. He was taken home and went to bed. He had two or three hours sleep in the afternoon, and again at night; the first unbroken sleep for weeks. He enjoyed his supper and breakfast more than for a long time. He was able to return to his vocation as night-watchman at a factory after eight daily treatments. He was enabled to breathe with sufficient ease to permit him to move about quietly without cardiac distress; his bladder symptoms were relieved; his appetite improved and he was able to sleep well. He can come to office in spite of March blizzards, snow or rain. No drugs have been given.

The reader may feel inclined to dismiss this case by saying: "The treatment was purely empirical and the result due to psychic emotions." The writer holds that the treatment rests on a scientific basis, and that the result is due to at least a partial restoration of physiologic functions. Dilatation of the capillaries is a physical effect of heat. The dilatation of the bronchioles and of the air cells in the least impaired parts of the respiratory tract helped to restore the physiological functions, pulmonary, cardiac, gastric and endocrine. The question may be asked, how long will the dilatation last? Under hygienic conditions respiration should preserve this dilatation until the morbid process has involved enough of the pulmonary tissue to prevent the inspiration of sufficient air to prolong life. The results in this case suggest the use of electrotherapy in a very wide range of respiratory affections.

CASE 5

Furunculosis. Female aged 18. The most exhaustive examinations failed to reveal any cause for the trouble. Patient was under care of a most competent otologist for three years, but the boils kept constantly occurring, unretarded by any treatment he could devise. The first time she came to the office she was suffering intense pain from a large boil near the outer end of the left external auditory canal. Auto-condensation was used as a sedative and tonic for the neuro-vascular system. A small electrode was held against each ear and diathermy used to heat of toleration. Soon after heat was applied the pain was relieved but treatment was continued for twenty minutes. She went home and slept for ten hours and in the morning her pillow was saturated with pus. The treatment was continued daily, tri-weekly and weekly for two months. Appetite and sleep were immediately restored, and lost weight quickly regained. Immunity to the cause of the furunculosis was soon acquired, and there has been no recurrence since the first application of diathermy a year ago.

All of these cases were under competent physicians and other measures of treatment for months or years.

Conclusions

Heat disinfects auditory canals and restores physiologic metabolism by its action on neuro-vascular systems. Sleep and appetite promptly return on relief of pain.

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Case Reports

A CASE OF CORONARY THROMBOSIS WITH PERICARDITIS AND HEART BLOCK AS AN EARLY COMPLICATION IN INFLUENZAL (?) PNEUMONIA

By J. E. Elliott, M.D.

Toronto

Singularly few records are to be found of coronary artery or vein involvement in acute infections: this is the more remarkable because the hinting at its occurrence is a common detail in many text-books, and further, arteritis is by no means an unheard-of complication in the better known febrile disorders, such as rheumatic fever, influenza, pneumonia, typhoid, para-typhoid and sepsis. One concludes that either the coronary arteries are exempted from their share of gross thrombotic accidents in a general infection, or that some of the cardiac happenings met with in the course of these disorders are really manifestations of a fairly large infarction which we fail to recognize.

As concerns influenza, W. H. Welch remarks that, "Arteritis is more common in this disease than in any other acute infection."[1] Osler states that in influenza, arterial thrombosis may occur very early; and, Blumer[2] speaks of arterial thrombosis being more common in influenza than in most infections.

In descriptions of the better known infections there are records in plenty detailing thrombotic accidents in the cerebral, pulmonary, femoral, axillary and mesenteric vessels; "the visceral arteries, especially those of the lungs, brain, *heart* and intestines; sometimes even in the main stem of the aorta." This is the distribution given by Blumer in speaking of infectious thrombosis in general. Nevertheless, few complete records of an acute infectious coronary thrombosis are accessible, and it has seemed to me that the following interesting history should be available for reference.

Mr. S., age 46, was seen by me three years ago complaining of fever and the general symptoms of an infection of the respiratory tract; he had a perfectly clear past record as regards infections or heart conditions; his affection suggested an influenzal attack, though one realizes that an agent other than the virus of influenza may have been responsible for the catarrhal symptoms in evidence. After five days of fever and diffuse signs in the lungs, it was possible to make out a small patch of consolidation in the right side, the sputum was purulent rather than bloody. Up to this time, he had seemed in fair condition, but, on November 14th, the nurse recorded: "pulse 72, flutters on moving" and later in the day, "pulse 88, irregular." On November 15th, the patient got up and although he still had a slight fever of 100°, went downstairs; while returning he was seized with very severe sub-sternal pain, and was with difficulty got to bed in an absolutely collapsed condition, pale and sweating, with a pulse weak, rapid and fluttering. While under observation by the nurse, he had a seizure like a convulsion, became unconscious for one or two minutes, and during the attack it was observed that his pulse rate had fallen to 47, and his face had become deathly pale. With returning consciousness and colour the pulse rate rose to 96. There were three more convulsive attacks during the afternoon; with each there was unconsciousness and during them the pulse dropped quickly to 40 and 20. During the two following days there were numerous slighter attacks, convulsive in nature with the pulse rate never above 40. Two days after this, the pulse rose suddenly to 90, and never dropped again; recovery was rapid and Mr. S. insisted on leaving for New York the following week.

During the most anxious stages of the disorder it was not considered wise to disturb the patient; certain examinations, however, could be easily performed, and it was determined that there was no very appreciable cardiac enlargement so far as percussion could inform one; preceding the signs of heart block the irregularity of the rhythm seemed to be due to numerous extra systoles. With the inception of the heart block it was easy to make out that there were three and four beats seen in the neck to one heard over the heart. On November 16th, the following note was made by Dr. Gwyn: "the pulse is 20 and 25 per minute, quite regular and quite strong; and the systole of the ventricle so strong as to raise the stethoscope; the extra pulsations in the neck which would seem to indicate the auricular activity are clearly evident; it is not possible to say that the blocked auricular systoles are detectable; at times there is the suggestion of the faint sound which might have represented the contraction of the auricle; the pericardial friction is still heard." For two days subsequent to the breast pain, it was possible to make out this pericardial rub,

which is so often described as occurring with infarction of the heart muscle. This was most in evidence about the apex, base and left border of the heart. Seven days after the accident there was in evidence a sign suggesting that the infarction had reached the interior of the right heart; two small areas in the lung showed friction and signs of consolidation. Heart block, fibrillations and arrhythmias are not uncommon accidents in the influenzal and pneumonic infections; we usually assume that the conduction apparatus has been upset by some action of the disease toxin, or one thinks in terms of minute thrombotic depositions or peri-vascular cell accumulations situated, perhaps, where they can exert their maximal effect. In the case reported here, the pericardial rub on the one hand and the heart block on the other speak for a fairly extensive process. It is probable that a branch of the right coronary artery was the thrombosed vessel, for the bundle of His is usually supplied with blood by the ramus septi fibrosi, an off-shoot of the ramus circumflexus of the right coronary.

The added detail of clinical interest, the development later on in the course of the affection of other areas of consolidation in the lungs requires a short reference. Libman suggests that in certain cases one may determine by the embolic accidents which follow, into which chamber of the heart the infarction has extended. Infarction which has roughened the interior of the left heart will tend to produce a thrombus attached to the heart wall; fragments from this thrombus will form emboli in the general circulation. An infarction affecting the walls of the right heart cavities will permit of emboli to the lungs, and in Mr. S.'s case the late development of small areas of friction and consolidation may be considered as indicating minor pulmonary emboli with infarction. Mr. S. is still alive. Naturally one can never speak with any certainty of the state of the coronaries in a man of over 40, particularly when one realizes that coronary degeneration may occur at a very early age; yet a history suggesting coronary thrombosis in the course of an acute bacterial infection which has the tendency to produce arteritis and phlebitis, appears to have sufficient interest to place on record.

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A NON-ERUPTED AND ABERRANT THIRD LOWER MOLAR TOOTH

BY S. H. CORRIGAN, M.D., C.M.

Lampman, Sask.

This case should be of interest to surgeons as well as dentists. A recent experience shows that no dentist, physician or surgeon can afford to forget abnormal conditions of the third lower molar. In process of development and eruption, departure from normal may be the lot of any one of the human teeth. The third molars however are more prone to aberrancy than any other; and of these, the lower third molars are more frequently affected than are the uppers. Every physician who extracts teeth has observed offending lower third molars.

Trouble commonly arises in those cases in which the tooth, although in normal position, erupts slowly and imperfectly, and the gingival tissue overlying the crown suffers frequent trauma, and inflammation and infection of the adjoining tissues takes place. Some of these cases cause one or more attacks of pain and œdema; but when the tooth is fully erupted, the trouble ceases. In other cases the pain and œdema are severe. There is always some degree of trismus.

For treatment, I apply to the inflamed gum once daily, tincture of iodine, and use a mild antiseptic mouth wash, and hot fomentations and if necessary, analgesics. If the trouble does not subside in a few days, I incise the soft tissue still overlying the tooth. In some of the severe recurrent attacks, I have excised the soft tissues well away from the crown.

In some cases, my patients have suffered so severely that they insist on extraction of the tooth and I, at times, have acceded to the demand. Another less common condition of the third molar, both upper and lower, is the eruption of the tooth in a position where it causes irritation of the mucous surface of the cheek. Such teeth should be extracted. In the condition, to which I have referred, the crown of

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the molar is, in part or entirely, visible on inspection.

The condition which led me to offer this paper, is one in which the trouble arose from a lower third molar, which was not visible on inspection and where the tooth was completely, or almost completely, encased in the alveolar process, and lying in such a position that eruption seemed to be impossible. This abnormality is apparently rare, for there is little in our surgical literature regarding it. I have practised for over thirty years in rural parts, distant from dentists, before meeting with such a case, the remarkable history of which I now present.

FIG. 1.—Unerupted and uneruptible lower third molar with a remarkable history.

The patient, male, aged 29, married, number 303 Lampman Union Hospital, was admitted October 2, 1926. He had had no previous illness and had been working until a few days before admission, when he gradually developed discomfort in all teeth on the left side. An examination revealed a slight swelling over and below the left mandible. He could not separate his incisors more than six millimeters; this was his chief complaint, for the initial pain had left him. He stopped working because of inability to take sufficient food. Forcing the mouth open I failed to locate any trouble beyond necrosis of the second upper molar. Pressure on this tooth induced pain and it was therefore extracted. The patient was treated with continuous hot fomentations for four days, but trismus increased until only fluids were taken.

Four physicians, one an excellent consultant trained in Edinburgh and London, examined the patient. Many conditions causing trismus were discussed. The senior attendant, suspecting malingering, advised the patient's employer to put him to work. This was done. A week later he returned, unable to work on a fluid diet. He stated there was no real pain, but much discomfort, which led him to demand the extraction of more teeth.

Refusing his request, I sent him away for x-ray examination. Unfortunately the x-ray was not used. He was hospitalized for ten days, examined by competent physicians, experienced surgeons and dental surgeons. The patient was etherized and the first and second lower molars were extracted. The difficult condition led to fracture of the teeth and all the roots were left *in situ*. Unimproved, he took his discharge and returning to me, again asked for further extraction of teeth. This was refused and x-ray search again urged. The patient went to a neighbouring physician, who gave him ether and removed an upper molar. Still unimproved, he settled down on a diet of milk and soup.

Finally, he entered one of the large hospitals of the province. He was there over seven weeks, observed by efficient physicians and surgeons. One of our best surgeons removed a cervical gland and later, by open incision, evidently made a search of the muscles of mastication. Finally, a correct interpretation by means of a radiogram was made. The third lower molar lay buried in the alveolar process. (See illustration.)

The patient was sent to a dentist for removal of the tooth. He removed the roots of the first and second molars, but left the third molar unmolested. Unimproved and taking his discharge, the patient returned to me and stated that the surgeon had told him that the x-ray showed "a little tooth buried under the gum and in the bone." On February 26th, five months after onset of his trouble, I etherized him. With powerful gags I opened the mouth, and incised the crest of the process, freed the periosteum, and laid bare a sufficient space which enabled me to detect a small area less than two square mm. in which I perceived what looked like dental enamel. What I saw was evidently part of what should have been the internal lateral surface of the crown. Extraction was not easy, but any general

surgeon or dental surgeon should have been able to do it. The tooth lay transversely and almost horizontal. The grinding surface was toward the cheek, but entirely encased in the mandible. The roots, dipping slightly, were rudimentary. From the top of the crown to the tip of the shorter root was 10 mm., and to the tip of the longer was 12 mm. The patient stated that recovery from distress began at once on the day of extraction and in three weeks he was normal.

What caused the tonic muscle contraction? This was the first attack. The man was from nine to twelve years beyond the age at which wisdom teeth erupt. There was no evidence of infection. Nature evidently made a late effort to erupt the tooth. Whatever this subtle process may be, it served through reflex effect on the inferior dental nerve, to cause continuous tonic contraction of the muscles of mastication, through a period of five months. Briefly, the tooth was a foreign body of which Nature, tolerant for nine to twelve years, became intolerant.

The lesson is plain. We should not forget the aberrant third lower molar which can exist invisible and impalpable; and I may add, medical men, and this includes dentists, should tell more of their mistakes and failures. So will we better achieve success.

Reviews and Retrospects

*THE CIRRHOSES OF THE LIVER

By Edward S. Mills, M.D., M.Sc.

Montreal

This study of cirrhosis of the liver was prompted by an interest in the occurrence of the disease in non-alcoholics. The cases reviewed are those from the records of the Montreal General Hospital for the past twelve years. In spite of the belief (expressed to me at the outset) that the disease is clinically so well established as to render an investigation of this kind futile, yet a survey of the cases classified at the hospital as biliary cirrhosis, convinces me that this type is, in the minds of may clinicians, far from being a cut and dried entity. Not one case of the series is typical of biliary cirrhosis, as classically outlined by Rolleston, by Lyon, and others, nor do the vast majority of the cases which have been so diagnosed, belong to this group at all.

During the past twelve years the diagnosis of cirrhosis of the liver was made in 109 cases. In twenty-three of these the Wassermann reaction was positive. The latter were excluded, not because they were instances of luetic cirrhosis, but because syphilis might conceivably modify the clinical picture. Of the remaining eighty-six, seventeen were classified as hypertrophic or biliary, (Hanot's type) and seventy-eight as portal in type.

The Etiology of Cirrhosis.

Cirrhosis of the liver results from a process of fibrosis of the organ, associated with, and subsequent to, necrosis and regeneration of liver cells. Excluding syphilis and passive congestion from cardiac disease, this change is brought about in two ways. The direct action of toxins upon the liver cell is generally believed to be the usual one. Infection of the biliary radicals by the colon bacillus or allied organisms, the other etiological factor, was brought to the fore by Adami and his school. It is of less importance clinically because it is responsible for a very small proportion of cases.

The belief that there are many toxic substances which may cause cirrhosis of the liver has, as a basis, evidence deduced from both clinical and experimental sources. In the laboratory, necrosis of the liver with fibrosis has been produced in animals by means of colloidal silica (Guy and Purdy), by amyl alcohol and phenyl hydrazine (Jaffe), by hæmolytic immune sera (Pearce), by phosphorus (Aufrecht), by chloroform and bacillus coli (Opie), and by coal tar (Davidson). In the last mentioned investigation, Davidson was able to produce pathological pictures varying from that of acute yellow atrophy to typical atrophic cirrhosis, by varying the dosage of the toxic agent, and he suggested that the similar clinical conditions are different stages of one and the same process. In animals, Findlay produced what he considers to be a biliary cirrhosis, by the feeding of manganese powder. In this connection Casamayor reported a similar cirrhotic process in the liver of a man who died from manganese poisoning. The dean of investigators of the cirrhoses of the liver, Dr. F. B. Mallory, has clearly demonstrated the association of copper with the pigmentary form of the disease. There are undoubtedly many other substances just as toxic to the liver cell.

In this country, from a clinical standpoint,

* From the Medical Service of Dr. C. P. Howard, Montreal General Hospital.

alcohol pays the greatest single rôle in the production of cirrhosis of the liver There is no convincing proof, however, that alcohol *per se* will produce the disease. Afanassijew gave mixtures of ethyl and amyl alcohol to dogs, rabbits, and guinea-pigs but failed to produce cirrhosis, and v. Kahlden, using various animals obtained negative results after feeding alcohol for 243 days. Mallory suggests that its toxic action may be due to impurities added during the process of distillation. Whether the damage is to the liver cell directly or the result of a gastro-enteritis, from which endogenous toxins reach the liver, is also under debate Be this as it may, sixty-seven per cent of our cases were hard drinkers for many years, and an additional fifteen per cent admitted to the moderate but habitual use of alcohol in some form. Fifty-seven patients were addicted to spirits in the form of whiskey or gin, and twenty-five were beer drinkers. Only one drank wine exclusively. One of the most typical cases of the series came to necropsy at the age of thirty-four years as a direct result of hæmatemesis. He was the son of a German tavern keeper, and began his daily indulgence in beer at the age of six. At twenty he began to abuse spirits, and died fourteen years later from a ruptured œsophageal varix, the first symptom of a small hob-nail liver. On the other hand, a considerable percentage denied the use of alcohol in any form, and no clue as to the nature of the toxic agent was obtained from the history, or other available information.

In reviewing the reported clinical cases of hepatitis which have been followed to autopsy, certain general features bearing upon the etiology become evident. When these are graded according to the acuity or duration of the process, one finds on the one hand what is to all intents and purposes acute yellow atrophy, and on the other atrophic cirrhosis. There are abundant illustrations of the intermediate gradations. These differences may, and undoubtedly are due not only to various concentrations of the same toxin, (as in experimental animals) but to toxins of different pathogenicity. Instances of subacute atrophy with fibrosis are not uncommonly reported in children. The case of infective hepatitis with cirrhosis published by Hutcheson and Paterson is a good example of this type. In this case the clinical course was characterized by fever, leucocytosis, and enlargement of the liver and spleen, ascites and jaundice. Histologically the liver showed areas of necrosis, with a well-marked cirrhosis, and areas of nodular hyperplasia. These authors conclude that a less severe infection (or intoxication) would have resulted in a more even balance between necrosis and hyperplasia, with the eventual production of a typically cirrhotic organ. Other cases of a more chronic type serve to emphasize the belief that there is no essential qualitative difference between acute yellow atrophy and toxic cirrhosis of the liver. The latter represents the reaction of the organ to the slow continued action of toxins of different kinds, of which alcohol or impurities in it, is but a single example. Other cases may be, however, the end result of a single acute toxic process, in which immediate recovery took place, the fibrous organ being the healed stage of the old lesion.

The periportal distribution of the fibrous process suggests that the etiological agent reaches the liver by the portal blood stream. On the other hand Noel and Rosier offer a somewhat different explanation. They maintain that there are in the liver lobule three zones of varying physiological activity; a periportal, or zone of permanent functioning, a perihepatic, or zone of permanent repose, and an intermediate zone of variable activity. Ordinarily only the first mentioned zone of cells function, the other two being in reserve. For this reason the periportal cells bear the brunt of the attack and succumb first. This hypothesis is based upon morphologic changes in the liver cells observed during experimental studies on white mice.

The one undisputed cause of biliary cirrhosis of the liver is a chronic capillary cholangitis, due to the colon bacillus or allied organisms. Not one in our series of diagnosed biliary cases was proved to be of this etiology.

In summary, it may be said that cirrhosis of the liver results from a low grade infection of the biliary radicals, or as is much more common, it follows the continued ingestion of toxins derived from alcohol and unknown sources.

The Incidence of Cirrhosis.

By far the greatest number of cirrhotics come under observation during middle age, in the fifth and sixth decades. This is not surprising when one considers the rôle which alcohol plays in its production. In this country the diseased is a rare occurrence during infancy and childhood. Cases are, however, reported occasionally as instances of Hanot's type. The course of the disease is fatal much more rapidly than in the adult, the large liver undergoes shrinkage, ascites occurs early, and the organ eventually presents features of the portal type, or what has been termed subacute atrophy. Day reported such a case in a child of fourteen months. In India, however, cirrhosis in infancy is much more common. It occurs mostly among Hindu infants in Bengal and southern India. In commenting upon the disease, Prof. Bhattacharji of the Calcutta School of Tropical Medicine, states that it runs a relatively short course—from six months to two years; that it is characterized clinically by enlargement of the liver and spleen, by fever and jaundice; and that, as the condition advances the liver and spleen shrink, with the development of ascites. Such a description tallies well with the reported infantile cases in this country.

The disease is somewhat more common in adolescence than in childhood. It may be associated with progressive lenticular degeneration (Wilson's disease). Hanau, who reports four

cases, two in infancy and two in adolescence, suggests that some congenital abnormality may be responsible for cirrhosis in children. In our series none occurred during infancy or childhood, and only two during adolescence.

Compiled statistics from various clinics show that the disease is much more frequent in males than females. In the present series of cases, out of 109 of all types, only twenty-four were women, and this is about the average proportion. Only three authentic cases of the pigmentary type have so far been observed in women (Mills). Some recent figures from Chauffard's clinic suggest that cirrhosis is becoming much more frequent among women in France. Out of twenty-three cases occurring during two years ending May, 1924, sixteen were women. It was also observed that the course of the disease in these cases was of a much more varied character, and much more rapidly fatal. Chauffard and Brodin suggest that these changes may be due to the borrowing of man's habits and occupations, and that, through lack of inborn or acquired resistance, they are more susceptible to the disease. The following table shows the yearly incidence of the disease in our series, as compared with that in the Cook County Hospital, Chicago. The latter figures were supplied through the courtesy of Dr. L. G. Rowntree of Rochester. The table shows that the incidence of the disease in Montreal is increasing whereas in Chicago it is on the decline. These variations may be partly due to differences in the amounts of spirits consumed.

The Diagnosis of Cirrhosis.

The present clinical and laboratory methods are inadequate for the early diagnosis of liver disease. Liver function tests have, in this hospital at least, been valueless, and even the Van den Bergh reaction and urobilin estimations are, at this stage, of little import. The process is so insidious, the damage so gradual, the compensatory process so perfect, as to permit widespread changes to occur in the organ before it becomes evident by clinical observation, or by laboratory methods. The recognized onset in our collected cases illustrates this point. The first complaint in twenty-six instances was swelling of the abdomen and legs, or of the abdomen alone. In eleven the first intimation of the disease was a gastric or oesophageal hæmorrhage and in seven, the gradual onset of jaundice. Thus in forty-four out of eighty-five the first symptoms observed were indicative either of portal obstruction or of extensive destruction of the liver. There are cases, however, which, through lack of regenerative ability of the organ, or because of the concentration or virulence of the toxin, manifest themselves early. Such cases are not rare in infancy and adolescence, but become less common as one reaches adult life and old age.

The varied symptomatology naturally raises the question of the differentiation of the so-called biliary from the portal type. So far the subject has been discussed with very little regard to this clinical division, and for the reason that, if we accept the majority of diagnosed biliary cases as such, there is scant basis for such a classification. Rolleston points out that a chronic progressive jaundice in a young person, with periodic febrile exacerbations, with increase in hepatic and splenic measurements, leucocytosis, bile in the urine and faeces, without evidence of ascites or gall stones, *suggests* the disease. Others give precisely the same clinical description. There is, we believe, considerable doubt as to whether this symptom-complex may be permanently produced by means other than infection of the bile ducts. When the published cases of biliary cirrhosis, which have been observed to their termination, are reviewed, many clinical discrepancies appear. The most constant one is the eventual shrinkage of the liver, with the development of ascites. At autopsy few have shown infection of the bile ducts. The following chart is a brief résumé of the clinical findings in the cases so diagnosed at the Montreal General Hospital. The first listed

TABLE I

Table to Show Yearly Incidence of Cirrhosis

	M.G.H. Series					*Cook County Series*		
Year	*No. of Admissions*	*Male Cases*	*Female Cases*	*Total*	*Percentage of Admissions*	*No. of Admissions*	*No. of Cases*	*Percentage of Admissions*
1915....	7,860	13	1	14	1.7	27,104	157	5.5
1916....	8,136	4	2	6	0.7	31,261	160	5.1
1917....	7,665	4	4	8	1.0	22,680	156	6.8
1918....	7,295	7	4	11	1.5	29,527	89	3.0
1919....	5,797	4	2	6	1.0	27,819	48	1.7
1920....	5,810	3	0	3	0.5	27,862	19	0.7
1921....	6,046	2	0	2	0.3	33,455	36	1.0
1922....	6,562	7	1	8	1.2	37,566	57	1.5
1923....	6,821	4	1	5	0.7	40,098	51	1.2
1924....	6,175	11	2	13	2.1	41,945	61	1.4
1925....	6,222	10	3	13	2.1	42,445	81	1.9
1926....	6,524	16	4	20	3.0	42,370	31	0.7

XUM

is a hypothetical case to illustrate the diagnostic features, as outlined by Rolleston, and to contrast them with those of our series.

There is not one case which conforms in all respects with the classical description of the disease. Few are in young persons, others have a long alcoholic history, and only two showed fever combined with leucocytosis. One had clay-coloured stools, and another did not have jaundice at all, while two lost their jaundice after a time and when last heard from were enjoying good health. Although the clinical records of any disease present frequent and numerous variations from the recognized type, yet a reasonable uniformity in the clinical and laboratory features may be expected.

It may be that many of these cases of so-called biliary cirrhosis are really instances of toxic hepatitis, belonging to the portal group. The forms of cirrhosis which occur in infancy and childhood may be cited in contention of this supposition. They present a picture at first rather typical of the biliary type, but as the disease progresses, the liver shrinks, ascites develops, and the picture is predominantly portal. At necropsy the lesions are usually of a portal nature

In the group of seventeen cases outlined in the preceding chart, the diagnostic features appear to have been enlargement of the liver and spleen with jaundice, but without ascites. Such a case is hardly more diagnostic of biliary than of portal cirrhosis, for only about sixty-five per cent of the typically portal type actually do show fluid in the abdomen, and jaundice is not uncommon. The following case from our series is cited because it is a splendid illustration of the points which have just been discussed.

E. E., aet. 20, a school teacher in rural Ontario, consulted her doctor first in 1921 because of weakness and stomach trouble. Her personal habits had always been exemplary. She had had an illness at the age of six, characterized by weakness, and pins and needles sensations in the right leg, but with good recovery. At the age of nine she had scarlet fever, at seventeen, typhoid fever, and at nineteen, measles.

The family history was irrelevant.

She had been subject to "bilious attacks" for some years. These were of short duration and characterized by headache, epigastric pain and vomiting. Shortly before

TABLE II

DIAGNOSED CASES OF BILIARY CIRRHOSIS AT M. G. H.

Case	*Age*	*Alc. Hist.*	*Duration of Jaundice*	*Size of Liver*	*Size of Spleen*	*Leucocyte Count*	*Temperature*	*Bile in Fæces*	*Listed Diagnosis*	*Remarks*
Type case	30	0	2–3 yrs.	5 F.B.	+++	15,000	99–101°	+++		
3307	22	0	3 yrs.	4 F.B.	+++	7,000	0	?	Hanot's	Fever and Leucocytosis lacking.
3760	29	+	1 yr.	4 F.B.	+	6,200	97–101°	+++	Infective	No Leucocytosis.
3659	29	+	6 yrs.	4 F.B.	+	5,200	97–100°	+	Hypertrophic	No Leucocytosis.
3955	32	+	¼ yr.	2 F.B.	+	9,000	0	+++	Hanot's	No Fever.
1406	41	+	3 yrs.	4 F.B.	+	4,750	0	+	Infective	Never had Fever or Leucocytosis.
5399	28	0	2½ yrs.	4 F.B.	+++	5,400	97–101°	+	Infective	Now well. Free from Jaundice.
4576	33	0	15 dys.	3 F.B.	+	6,000	0	+	Hypertrophic	Jaundice subsided.
1622	16	0	0	7 F.B.	++	5,200	97–100°	?	Hanot's	Never had Jaundice.
6924	42	0	3 wks.	6 F.B.	+	7,200	0	?	Hypertrophic	Fever and Leucocytosis lacking.
3744	63	0	3 yrs.	3 F.B.	++	7,600	96–102°	0	Hanot's	Bile free fæces. Age vs.
432	44	0	1 wk.	4 F.B.	0	8,540	98–99°	+	Hypertrophic	Spleenn ot enlarged
231	61	0	2 yrs.	4 F.B.	+	14,000	0	+	Cirrhosis	Disproved later by operation.
3192	48	+++	3 wks.	2 F.B.	+	7,000	98–100°	+	Hypertrophic	Liver atrophic later
4131	40	+++	2½ yrs.	6 F.B.	+++	?	96–103°	?	Hypertrophic	Chronic alcoholic.
4216	66	+++	3 yrs.	3 F.B.	0	19,000	97–100	?	Hypertrophic	p.m. Gall stones. Abscesses at liver.
5292	48	+++	1 wk.	3 F.B.	0	6,000	98–99°	?	Cirrhosis	Chronic alcoholic. No spleen.
1298	55	++	2 mos.	2 F.B.	0	6,250	0	?	Hypertrophic	No temp. or Leucocytosis: Alc+.

seeking medical advice she began to have flatulence after meals and pain across the upper abdomen at night. There was also a recurrence of the weakness in the right leg. The doctor found at this time that she was running a mild fever. These symptoms persisted, and in the following year a purpuric eruption appeared, followed by the gradual onset of jaundice. At this time she had a very much enlarged liver and spleen and was feverish at times. In April, 1922, exploratory laparotomy revealed a typically cirrhotic liver, and she was sent home.

This clinical description might well be used as a typical example of Hanot's cirrhosis. The pains in the upper abdomen, the fever, the enlargement of the liver and spleen, with jaundice but without ascites, occurring in a young person, is characteristic. But here is the sequel.

After returning to her home the jaundice gradually disappeared, although she continued to remain in poor health. The abdominal pain and fever persisted, and the liver gradually decreased in size. In 1924 she had a brisk gastric hæmorrhage, and last autumn was admitted to the Montreal General Hospital. The important features on admission were briefly these: She was a thin cachectic girl with a moderate secondary anæmia but not jaundiced. The abdomen was not distended, though somewhat tender on palpation. The spleen extended 3 f.b. below the costal margin, but the liver was not palpable. There was neither free fluid present, nor evident compensatory circulatory phenomena. Some months later she died of broncho-pneumonia. The autopsy showed a liver weighing 780 grammes, quite cirrhotic, but without even microscopic cholangitis. The spleen weighed 460 grammes and did not show the changes of Banti's disease. There was no ascites.

Here then is an instance of a toxic (portal) cirrhosis not due to alcohol, which for a considerable period of time presented the clinical features of biliary or Hanot's cirrhosis, but which never showed portal obstruction, and ultimately proved to be an atrophic form of the disease. There are other instances in this series, just as striking, but which have not as yet come to necropsy. On the other hand, some of our cases are probably typical instances of biliary cirrhosis due to a radicular cholangitis. The truth in each instance can only be definitely established during life by biopsy section which is seldom if ever advisable.

In summing up the question of the classification of the cirrhoses, it would seem to be advisable to discard entirely the time-honoured division of the cases into biliary and portal groups. Internists would be sacrificing nothing by adopting the etiological classification suggested by Mallory, and commended by Osler. The exchange of the term cirrhosis for chronic interstitial hepatitis, which appears in a recent issue of Osler's Modern Medicine is also recommended. The one now suggested, differs only in minor details from that of Mallory.

CHRONIC INTERSTITIAL HEPATITIS

A.	INFECTIVE	Primary (cholangitis). Secondary (due to obstruction without the liver).
B.	TOXIC	Alcoholic. Known toxin ($CHCl_3$, phosphorus, As., etc.).
C.	PIGMENTARY.	(Hæmochromatosis).
D.	SYPHILITIC	Diffuse type. Hepar Lobatum.
E.	SECONDARY.	(Banti's disease).

When our series of cases is reclassified after the manner just suggested, it is surprising how closely the figures tally with those recently published from the Boston City Hospital. This latter group consists of 250 cases, verified by autopsy and histological study. The only discrepancy is in the figure for the pigmentary type. We were not able to locate a single case of this type in the peried of time reviewed.

Type of Cirrhosis	*M.G.H. Series*	*Mallory*
Number of Cases	109	250
Infective	4.6%	5.2%
Toxic (*a*) Alcoholic	60.0%	45.6%
Toxic (*b*) Unknown toxin	14.4%	15.6%
Pigmentary	0	7.6%
Syphilitic	7.3%	6.0%
* Mixed Type	13.7%	20.0%

* Mallory's cases were a mixture of the alcoholic and pigmentary types; ours had alçohol and syphilis as coexisting factors.

THE COMPLICATIONS OF CIRRHOSIS.

The two most common complications of cirrhosis of the liver are peritonitis and primary carcinoma of the liver. The former is usually of tuberculous origin, though it may be due to the pneumococcus. The frequency of tuberculosis in cases of cirrhosis is by no means a settled point. Rolleston quotes Rogue and Cardier as saying that the ascites in cirrhosis is always due to a tuberculous peritonitis and perihepatitis. Letulle, on the other hand, maintains that it is due to syphilis. Rolleston's own opinions are couched in the statement that patients with cirrhosis are prone to tuberculosis of the lungs and peritoneum, and that the former causes death in thirteen per cent of cases of latent hepatic disease. Stengel and Kern find tuberculous peritonitis as a terminal complication in one per cent of fatal cases. The French school stresses a more acute form of peritonitis due to the pneumococcus or similar organisms. Garnier has collected seven cases of pneumococcus peritonitis complicating alcoholic cirrhosis with ascites, and Dumitresco-Mante and Olinesco cultured an enterococcus from the ascitic fluid in another case. In our series of cases there were no proven cases of tuberculosis of the peritoneum. In two diagnosed as such, the autopsy proved the presence of the peritonitis, but the liver showed no cirrhosis. One case had an old healed peritonitis of undetermined etiology. Another in the wards at the present time, has a peritonitis due to a diphtheroid bacillus, which has been cultured from the ascitic fluid on several occasions.

Only one case in the series was complicated by primary cancer of the liver cell variety. Counseller and McIndoe give the incidence of this complication in the Mayo Clinic series as from three to five per cent of the cases of cirrhosis. This complication is somewhat more frequent in the alcoholic than in the other types because of the more active regeneration of liver cells. The liver cell type is slightly more common

than the bile duct variety, according to Winternitz, in the proportion of three to one.

The Treatment of Cirrhosis.

There are few therapeutic measures which bring even symptomatic relief when the cirrhotic process is well established. Improved general hygiene, hydrotherapy, light diet with the elimination of condiments and alcohol, and frequent tappings where there is ascites, are still the main stand-bys. Surgery has contributed little if anything. The Talma-Morison operation (omentopexy) is generally conceded to give poor results. A report of the cases so treated in Kuttner's clinic since 1901 has just been published by von Tempsky. From a series of twenty-five cases, improvement followed in only seven. Stengel and Kern put the direct mortality from this operation at thirty-three per cent. Omentopexy was done on three of this series. One died as a result of the operation, while the other two were sent home improved, and one remained in good health for seven years afterwards.

Since the introduction of novasurol as a diuretic the drug has been employed in the treatment of ascites caused by cirrhosis of the liver. Anderson reports favourable results from the injection of nine doses of 1.3 c.c. at intervals of 4—6 days, combined with the oral administration of ammonium chloride. This method is worthy of trial, though in our hands it has proved unsuccessful. In none of the three cases upon which the drug was tried, was there any decrease in the amount of ascites.

An ounce of prevention is still worth a pound of cure. More than half of the cases could be prevented by eliminating the alcoholic factor, but the application of such a principle is well nigh impossible for, "knowledge comes but wisdom lingers."

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Errors in Diagnosis.—If there is one thing the doctor would like to repress into his "unconscious mind" it is the remembrance of his errors in diagnosis and treatment. The repression, however, might cause some dreadful complex of depression; so that perhaps it would be better if the peccant practitioner sought help against future blunders by reading Sir David Drummond's article on "Our mistakes and how they are made," in the October issue of the *Newcastle Medical Journal*, now edited by Dr. F. J. Nattrass. We all make mistakes, Sir David Drummond says truly; whether everyone acknowledges all his mistakes is, perhaps, debatable. Unfortunately, we must agree with him that most of our mistakes in diagnosis are avoidable; and that the commonest explanation of a diagnostic error is carelessness. To plead, as an excuse for carelessness, overwork or lack of time is, says the author, no vindication, since no man is justified in undertaking more than he can perform. This, however, is a hard saying, because some doctors have more work thrust upon them than they would wish to undertake. Sometimes trouble in diagnosis arises because the doctor is looking for a complete clinical picture, and fails to recognize a case in which some usual symptom of the disease happens to be absent. In other cases a careful history of the patient has not been taken; or all the possibilities in a difficult and doubtful case have not been reviewed. Many of our profession, it is said, have fallen into a bad habit of postponing the investigation of a new case until a more favourable season, with the result that a mental impression of the condition, based upon nothing substantial, is accepted as diagnosis. Sir David Drummond objects to the "snapshot" diagnoses of the man who relies on his clinical instinct; and he calls attention to two curious psychological sources of error—the tendency in some men to seek an unusual diagnosis while overlooking the commonest cause, and the habit of others of allowing the mind to be influenced unduly by the findings in a previous case. Several of these causes of error are illustrated by cases which have been met with by Sir David Drummond during his practice as a consultant; but he has not gratified our curiosity by confessions drawn from his own soul.—*Brit. M. J.*

Editorial

THE ANNUAL MEETING

THE joint meeting of the Canadian and of the Ontario Medical Associations which took place last month in Toronto, must be regarded as one of the most successful of our annual gatherings yet held. The numerous papers presented in the various Sections were all of a high order; the numbers in attendance greatly exceeded any previous record; the entertainments were unusually brilliant, and all the arrangements showed careful planning and an able executive.

On a Jubilee year, it is always expected that a speaker recall the past, and in his Presidential Address, Dr. Starr acclaimed the great progress made by the Association since its foundation in 1867. The Association, however, has had its dark days, and at the meeting in London in 1892, the future looked so unpromising owing to the lack of interest manifested by the members that a resolution to disband was proposed, and seriously considered, and was only held over on the earnest plea of Dr. Alexander McPhedran, who urged more perseverance and more official energy, requirements which were well supplied during the following year by Dr. Starr, then appointed as Secretary.

Looking back upon those dark days and upon the efforts then put forth, Dr. Starr must have felt much gratified by the great advance and increased activities shown by the many sections which now combine to form the magnificent annual meeting held this year.

Thanks to the patient, self-denying and almost continuous work of the Council, many difficulties have been overcome, and plans arranged for an efficient post-graduate service to all parts of the Dominion even to its scattered and outlying districts. The thanks of the Association are due to the Sun Life Assurance Company for its financial assistance, and to our General Secretary, Dr. T. C. Routley, who, true to medical tradition and high Canadian ideals, has declined tempting offers of financial gain to leave this field. To him the Association is deeply indebted.

Representatives of the important medical centres in Great Britain and in the United States, have added greatly to the success of the meeting. The presence of Sir Charles Sherrington of Oxford, Dr. J. Strickland Goodall of London, Dr. A. L. Flemming of Bristol, and Dr. Webb of New Zealand, as well as of several notable representatives of university centres in the States, encourages the hope that the Association may yet in time, extend its influence further afield, and become one of many factors in promoting better understanding and sympathy among English speaking nations.

Realizing that this meeting provides for so many practitioners the greater portion of their yearly holiday, the Committee of Arrangements made every effort to add to the pleasure of those present by providing brilliant social functions as well as scientific discussions. The ladies' programme was in charge of Mrs. F. N. G. Starr who spared neither herself nor the members of her large Committee in her efforts to make all visitors happy. She appeared to be in every place where she was wanted, and spent the greater portion of her time in arranging the many social functions, and in securing convenient transportation for all guests. The generous hospitality of his Honour the Lieut.-Governor of Ontario and Mrs. Ross, lent an air of state and dignity to the entertainment at Government House. The beautiful Donalda Farm with its delightful vistas, where Mrs. D. A. Dunlap received the Association at a charming garden party, will not easily be forgotten.

The annual dinner and dance was a brilliant function. The floral decorations in charge of the ladies were beautiful and effective. Six hundred guests sat down to a dinner, admirably served by an efficient staff. At its close the golf prizes were bestowed; following which a dance was held in the capacious gymnasium, and for those who

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were not interested in dancing, exhibitions of swimming, diving and canoe management were given in the adjacent swimming pool. The scene in the adjoining quadrangle with its multi-coloured lights presented a brilliant picture. The following night the dinners of the Alumni of the various Canadian universities took place. The Alumni of the University of Manitoba joined with those of Toronto and together filled the great hall in Hart House to its capacity. The Alumni of Queen's, McGill and London were arranged for in clubs and in private halls.

The second Listerian Oration was delivered on the last session of the meeting and constituted a fitting climax. Sir Charles Sherrington gave an eloquent and finished address pointing out how great Lister was, both in character and achievement; great even among the greatest of the benefactors of mankind, and presenting the story of his life as an inspiration to all to continue their work for the prevention and alleviation of human ills. R. R. G.

The Canadian Radiological Society

The decision of the members of the Canadian Radiological Society to disband and continue their work as a section of the Canadian Medical Association, will, it is hoped, prove mutually beneficial both to the radiologists themselves and to the members of the Canadian Medical Association who, while not specialists in this branch of medicine, are much interested in the results obtained. This Society was begun in 1912 as a section of the Canadian Medical Association, and continued as such until 1919, when it decided to become a separate Association to be known as the Canadian Radiological Society. While much good work was done by the Society since it assumed its separate existence it was felt that better work could be accomplished by again merging with the Dominion Association. Every year the papers presented at its meeting have been becoming less technical, but more interesting and valuable to the general profession. Among the subjects discussed this year were the value of skiagraphy in pulmonary tuberculosis, in diseases of the appendix, colon, and gall bladder, in diverticulitis, in sarcomatous conditions, and when associated with the use of lipiodol. As a result of this decision any member of the Canadian Medical Association in the future who may be interested in x-ray work, or in allied subjects, is at liberty to take part in the deliberations of this Section, which will function in a manner similar to the other Sections of the Canadian Medical Association. A. H. P.

The Commercial Exhibit

From every point of view the display of commercial products in the exhibit halls surpassed any previous effort of this nature. There were more exhibitors than at any previous meeting. The East and West halls of the University College lent themselves particularly well to such a display, and the firms who rented space spared no effort or expense to make their booths attractive. The result was a particularly effective display. Of more importance to the profession was the opportunity to see many forms of valuable scientific apparatus, much of it new in type; a great variety of new therapeutic agents; new food stuffs and old food stuffs in new forms; and a fine display of books by various publishing houses. The section of commercial exhibits at the annual meetings of the Canadian Medical Association has become one of great importance. Every member who attends the annual meetings will find much of instruction and interest in these exhibits, and it is the hope of the executive that all will avail themselves of the opportunity to visit the halls in which they are held. R. I. H.

Obiter Dicta

Why should we hold annual meetings? Or have an Association? The answer lies in the words themselves. Once a year it is good to come together and meet one's friends. Coming together and meeting one's friends presumes a common purpose. The purpose may include speaking in public, or being spoken to in public, and these items are quite within the meaning of the act, but it would be wrong to think that these were the sole reasons for the *con venio* or the *ad socios*. The speaking and hearing business is a good bait to tempt us away from our own bailiwicks, so that we may meet friends of like interests with ourselves, or make new friends of the same sort.

Such action is of a piece with going to a

play given for a good cause when otherwise we would never contribute to it, but the cause is the thing after all and not the play. If speeches and papers and such like get us together once a year the good work is done, and if we learn something from the talking, that is still more to the good. More than eighteen hundred people, it is said, were registered at this meeting, a number which surely gave opportunity for every one to find some old friend and make some new ones. Moreover, the accessory features of medical thought on which to cogitate, of entertainment such as doctors and doctors' wives enjoy, of hospitality unstinted, of friendliness open and expressed, and of weather that was ideal; all were there. Everyone was happy.

President Starr and his aides had arranged everything, thought of everything, planned everything; the buildings and grounds of the University of Toronto offered a setting unexcelled for the holding of a medical gathering; Hart House with all the architectural beauty of its great hall, its corridors and comfortable side rooms, the great quadrangle, and the magnificent Convocation Hall, where all could gather in comfort and see and hear; all lent themselves to the occasion. The Garden party at Government House, the annual dinner of the Association, the official luncheon, the alumni dinners on Thursday night, and the various excursions and entertainments in the afternoons, gave to every day a delightful stimulus for the more serious features of the medical programme. As to the programme, one man unfortunately can only attend one section at a time, but if that one section attended was representative of the others, there certainly is a good deal of conscientious work going on in Canadian medicine. No world-shaking developments were announced, but a number of general subjects were covered in a most adequate manner. The general sessions in the afternoons were addressed in many instances by extra-territorial guests from Britain and the United States. It was pleasing to see among the latter a number of Canadian graduates who had attained eminence abroad. The Listerian Oration, delivered on the last evening of the meeting by Sir Charles Sherrington, was worthy of the occasion, and fulfilled the high expectations which all held regarding such a distinguished speaker.

In speaking of the doings of the week, one should not forget the Council. It sat collectively, consecutively and continuously, the members only rising when a foursome was endangered by their continuing to sit. They wore red ribbons on their lapels as members of a staff are wont to do, and what they decided you shall know hereafter.

"What Lancashire says to-day, England will say to-morrow." While others played they worked.

We cannot exaggerate the national value of such a meeting as the Canadian Medical Association. This is a trite saying but it will stand a bit of thinking over. This country needs belting together from East to West, and every social contact, every common interest, every intellectual affinity, every mental picture of the face of a friend afar, every idea gathered from someone who lives at the other side of the Dominion is at the same time a coupler between the country's sections and a buffer between its sectionalisms.

Toronto has done itself proud, and so to Charlottetown in 1928. A. H. G

The Editor desires to express his indebtedness to Drs. Roscoe Graham, T. C. Routley, A. H. Pirie, R. I. Harris, A. H. Gordon and W. A. Wilkins, for reports of the meeting, from which the above was compiled.

THE TOXÆMIA OF INTESTINAL OBSTRUCTION

AN address on the Toxæmia of Acute Intestinal Obstruction was delivered recently before the Royal College of Surgeons, London by Mr. B. W. Williams in which he called attention to the high mortality which follows this serious affection and which has fallen so little, notwithstanding the great advances made in general abdominal surgery during recent years. The toxæmia, which is the primary cause of the mortality develops early and renders futile even the most skilful operative technique. Even

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prompt operation has not sufficed to bring the mortality down much below 20 per cent, while in a large series of cases it may approach a much higher figure. Mr. Williams describes the aspect of a patient suffering from this condition, as closely resembling that of an individual the victim of gas gangrene. The notable features are the rapid pulse, cyanosis, and the presence of a slight icterus, and above all, the restlessness, and acute consciousness, which may last to the very end. In some cases this mental condition is very remarkable; the patient may state that he feels better, although his pulse may be rapidly becoming imperceptible and he may die very shortly afterwards. In other cases, however, there is an abnormal mental irritability. In his investigation, Mr. Williams set out with the hypothesis that in ileus the toxæmia and high mortality, which occur in spite of prompt mechanical relief, were due to poisoning by the abnormal proliferation of toxin-producing anærobic organisms in the intestines, of which probably the most important was the *Bacillus Welchii*. This organism is an almost constant, but not a flourishing denizen of the alimentary canal, and develops chiefly in the small intestine, whose contents are alkaline and free from oxygen. It is an organism sensitive to the presence of acid, and is therefore prevented from developing in the stomach and in the large bowel, but is able to proliferate abundantly in the small intestine whenever stagnation occurs. Experiments appear to show the presence of the toxin of this organism in large amounts whenever stagnation occurs. Absorption would appear to take place promptly from the damaged mucosa, leading to the very grave general condition associated with the later stages of obstruction of peritonitis. Moreover, it would appear that the toxin completely paralyses the smooth muscle of the bowel wall, so that the body is unable to rid itself of the source of the toxæmia even after the mechanical block is removed. As a result of these researches, an antiserum was prepared, and in a series of cases which he reports, appears to have justified the hopes raised. In a series of 214 cases of obstruction the mortality rate was 24.8 per cent; while in a series of similar cases, in which the antitoxin was employed, the mortality was only 9.3 per cent. Mr. Williams suggests that there may be a further saving of life by injection of the antitoxin prior to operation, thus preventing the sudden collapse occasionally met with even after successful operative relief has been given. A year or two ago, Dr. T. G. Orr, of the Western Surgical Association, attempted the elimination of the toxæmia by the employment in large quantities of hypertonic saline, given intravenously, and Dr. Colman of Canton, Ohio, by this means has reduced his operative mortality from 50 to 11 per cent. A quart of 3 per cent saline is given before and also following the operation, with the result that it enables the toxic patient to eliminate sufficiently rapidly his load of toxin. Mr. Williams's research must be regarded as another very valuable contribution to enable us to lower the heavy mortality of this very fatal affection.

ON BRONCHIECTASIS

A VERY interesting discussion on the etiology of bronchiectasis took place at the Royal Medico-Chirurgical Society of Glasgow during April. Dr. James Adam gave the history of nine cases which he had met with in his own experience, which apparently were due to the inhalation of toxic material as they were associated with nasal sinusitis, and of four others which were of post-pneumonic origin. He emphasized the importance of an early diagnosis, and to assist in this, strongly recommended the introduction of lipiodol. Nasal sinusitis, he said, had been overlooked as a cause of this trouble, but if it was recognized early, the subsequent development of the bronchiectases was preventable by prompt investigation and treatment of the nasal passages.

Professor Leonard Findlay spoke of the etiology of bronchiectasis in childhood, and stated that in any large series of cases of chronic pneumonia followed by bronchiectasis, the majority were either children, or had developed the disease during childhood.

The symptoms were very variable, and in most of his cases diagnosis had only been made certain by the intratracheal injection of lipiodol. Three types of cases were met with: cases of bronchiectasis with typical signs and symptoms; cases with suggestive symptoms but no signs of bronchiectasis; and cases of bronchiectasis with neither signs nor symptoms. He had no hesitation in saying that not only for the diagnosis of the condition, but also for correct information regarding its extent, the injection of lipiodol was essential. Indeed, in the diagnosis of many forms of pulmonary disease, he considered the use of lipiodol the greatest advance since the introduction of radiology.

As a rule, children suffering from bronchiectasis were undersized but well-nourished. In a series of 25 cases clubbing of the fingers was present in 11, and its amount bore a closer relation to the extent of the disease than to its duration. Cough was present in 24 cases and absent in 1. Expectoration was present in 17 cases, and absent in 6. In only 3 cases was there sputum present. Amphoric breathing was audible in 10 cases, and whispered pectoriloquy in 7.

Professor Findlay regarded the disease as part and parcel of chronic pneumonia. In the post-mortem material, both chronic pneumonia and pleural adhesions had invariably been present. The disease in all but three of his cases appeared to be entirely due to acute pulmonary disease, such as broncho-pneumonia. In only three cases had the disease set in insidiously.

In speaking of the use of lipiodol in these cases, Dr. Stanley Graham, after describing the technique of its use, stated that the method appeared almost free from danger, and said that Forestière had never seen nor heard of any fatal accidents. Dr. Graham himself had seen only two. In neither case did the patient receive any permanent danger. Some writers had reported iodism following the use of lipiodol, but he had never observed it. As much as 30-38 c.c. could be given to a child without untoward effects; presumably most of it was coughed up. In his opinion, the absorption of the oil from the site of the bronchiectasis must be greatly diminished.

In Dr. Anderson's opinion, the great majority of cases of bronchiectasis gave a long history, and probably started in the early teens. Most of his patients had been males, the proportion being roughly five to one.

The histological picture of bronchiectasis is essentially disappointing. By the time these long-standing cases reach the post-mortem room, all hope of elucidating any satisfactory information as to their etiology has long since passed. We have frankly to admit that the condition of bronchiectasis is not one in which our knowledge has made much advance.

MENTAL DISEASE IN RELATION TO EUGENICS*

DISEASE in general is the result of failure on the part of the organism to adapt itself to the inimical agencies of its environment. This failure is the essential feature of mental disease, and may present itself in three types. In the first, the mind fails to develop up to the stage which is requisite for efficient adaptation to take place. There is a permanent and incurable deficit; a condition which constitutes mental deficiency. In the second form, the failure is due to an interference with the mind's powers to function; a disturbance which may be slight and transient, or it may be profound and of long duration. It may involve minor functions only, or it may be so extensive as to upset the whole mental balance. In the third form, adaptation fails because the mind is in process of deterioration and decay. This may be in consequence of old age, but it very frequently occurs long before the average span of life has been reached. In one of the commonest forms of mental disease, such decay sets in during the period of adolescence, and it may even appear in the first decade of life. Deterioration of this kind is usually steadily progressive and gives rise to the various kinds of dementia. Thus, for purpose of reference it is convenient to speak of mental disease as defect, disorder and

* The Galton Lecture, A. E. Tredgold, Physician, Bethlem Royal Hospital, *Lancet*, March 5, 1927, p. 526.

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decay of the mental powers; the more or less separate conditions, nevertheless, bearing a close relationship to one another.

A proportion of cases are the result of adverse external agencies acting directly upon the individual; thus, the development of the brain may be arrested by injury or disease, and mental deficiency result. The normally developed brain may be damaged by poisons or inflammation, and insanity or dementia supervene. A perfectly healthy individual may be subjected to such extreme mental distress as to cause mental disturbance. Such cases, however, comprise a relatively small proportion of the whole. There is clear evidence that the great majority of persons suffering from mental defect, disease or decay owe their condition to an inherent predisposition. This predisposition may be so strong as to produce its effect in the absence of any external factor. In other instances, it is associated with factors which are apparently trivial and would have had little effect upon a normally constituted individual. About four-fifths of all cases of mental deficiency are due entirely to inherent causes.

A working concept has been formulated regarding the genesis of mental disease, and of the manner in which the chief forms of this disease are linked to one another. The basis of mental diseases in almost all cases is a predisposition, the result of an impairment of the developmental potentiality of the neuronic determinant within the germ-cell, due to adverse factors in the environment. Of these factors the most important are toxins, either introduced into the body from without, or developed within the body itself. The results of an impairment of the germ-cell are influenced by the condition of the cell which it fertilizes, or by which it is fertilized. This raises the question of the mode of hereditary transmission. Attempts have been made to show that mental disease is a Mendelian unit, transmitted according to Mendelian laws. These attempts, in Tredgold's opinion, have failed. Since inheritance is of developmental tendencies only environment will play a part in their realization; factors acting after the completion of development may render any latent defect of durability patent and may cause the mental break-down of an individual in whom the predisposition is only slight.

It is clear that further combinations of these three factors, *viz.*, variation in the degree of germ impairment, the condition of the combining cell, and the nature of the environment, will be responsible for the very varying results in different individuals derived from the same stock or belonging to the same family.

It not infrequently happens that an individual who has inherited the neuropathic diathesis mates with one who is similarly tainted. There is then a predisposition for the mental impairment to assume a more severe form in the next generation. The result of this mating may be to produce mental defects with sterility and extinction. In other instances, the offspring, although carrying the taint and showing some impairment of mental capacity, may not actually suffer from mental disease. Mental disease may be continued by carriers who may themselves appear to be normal, or who do not appear to suffer from a degree of abnormality, which would be recognized as disease.

In considering the bearings of mental disease upon eugenics, and the community, it is necessary at the outset to allude to the prevalent misconception regarding the relation of mental disease to genius. It seems to be commonly assumed that genius is intimately connected with insanity, so that it is desirable that a community put up with the insane for the sake of a possible genius. Tredgold states that he has searched in vain for any correlation between genius and insanity. On the contrary, the great majority of men and women of outstanding ability have been particularly sane, and have come of a sane and healthy stock. On the other hand, there is clear evidence that mental disease is closely associated with social incapacity, inefficiency and retrogression, and serious as is the damage done by mental disease to the present generation, the damage inflicted upon the race would appear to be even greater.

Two methods for preventing this propagation have been suggested: sterilization and segregation. Without entering into a discussion of their respective merits, the speaker stated that after careful consideration of all the points involved, such as practicability,

cost, happiness of the defective, and the effect upon the community of the release from proper oversight of persons who are incapable of caring for themselves, he had come to the conclusion that the advantages of segregation outweigh those of sterilization. Certain it is that even if by sterilization or segregation, or supervision, it was possible absolutely to prevent propagation by defectives, we should by no means eliminate mental defect or disease. The sterilization or segregation of every defective would merely prevent the birth of that relatively small number who are the offspring of parents who are themselves defectives. What, then, is to be done? There is one way, and one way only, by which it is possible to stop degeneracy and advance racial progress. That way is by an educational campaign, whereby the whole community shall be enlightened as to the part played by inheritance in the causation of health and disease.

In other words, by developing throughout the nation, the eugenic ideal; not merely an intellectual recognition of the desirability of producing sound and healthy offspring, but a feeling or an emotion toward this ideal; a sense of shame at the thought of bringing into the world defective children; a sense of satisfaction at the thought of producing children healthy and capable. In terms of psychology such an ideal constitutes a sentiment and the human mind has a great capacity for acquiring sentiments. Our knowledge on these matters is far from complete; but there is quite enough to act upon, and in the speaker's opinion the education of the Nation should be the main objective.

EXPERIMENTAL PRODUCTION OF CALCULI

IN a volume composed of a series of valuable papers setting forth "Progress of the Science of Nutrition in Japan," recently issued by the Health Organization of the League of Nations, two articles by Yoshitomo Fujimaki arrest one's attention. In these articles Fujimaki records an elaborate study of the formation of urinary and bile-duct calculi in animals fed on experimental rations. The study was prompted by the frequency with which Fujimaki had noted the presence of these calculi in rats which had been kept for long periods on a diet which was either free from or poor in vitamin A.

In his experiments, Fujimaki investigated deficiencies in each of the vitamins A, B and C; in mineral salts (especially calcium and phosphorus); in protein; and in several combinations of vitamins. Rats, Chinese mice, puppies and dogs were employed in the tests. Seemingly the utmost care was taken to assure scientific accuracy. The results of a large number of experiments are tabulated.

The summary of his results indicates that calculi did not develop in animals which were kept on a normal diet, nor in those which were fed on a diet deficient in either vitamin B, vitamin C, or a combination of these vitamins. Nor did calculi develop within a month in animals whose food was deficient in vitamin A or in both vitamins A and C. But more prolonged feeding of these latter diets led to the production of calculi, which developed in practically all the animals so fed for three months or more. Bladder calculi appeared very commonly in the second month, kidney stones made their appearance later, and bile-duct stones seldom appeared much before the end of the fourth month. In quite a large number of animals, subjected to this diet for several months, all three varieties of stones developed. The urinary calculi were composed of phosphates; the biliary calculi of cholesterol.

A number of rats which gave x-ray shadows indicating the presence of large bladder stones were placed on a diet rich in either vitamin A or both vitamins A and C. In all cases the physiological condition at once showed improvement. At the end of two and a half months one was killed: four stones had disappeared and a fifth gave evidence that it had been dissolving. In three rats killed at the end of three months and two killed after four and a half months, no stones were found. It was noted that the deficient diet caused alkalinity of the urine, which gave place to acidity when the normal diet was resumed.

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In his second paper, Fujimaki discusses his experiments with diets deficient in protein; in vitamin A and protein; and in vitamin A and inorganic calcium and phosphorus. In the case of rats fed with a protein-deficient diet, nearly all died within a month and a half, but two survived for a hundred days. In no instance were calculi found. Fourteen out of twenty rats fed without vitamin A and protein died within a month; in two cases bladder stones were found. Of the other six, two developed kidney stones and one developed bile-duct stones. None survived much over three months.

The results obtained from eliminating vitamin A and inorganic calcium and phosphorus from the diet were particularly striking. Seventeen out of twenty-five rats died within thirty days; one showed bladder and kidney stones, while two showed bile-duct stones. None of the others lived more than sixty-four days; four of them showed bladder, kidney and bile-duct stones, two showed bladder and bile-duct stones, one showed bile-duct stones. Bile-duct stones formed before bladder stones, and kidney stones formed last of all. The urinary calculi were composed of carbonates; the bile-duct calculi of cholesterol with an abundance of calcium salts and pigment.

Fujimaki contents himself with a simple statement relative to the results of his experiments, and suggests no clinical application. Such admirable restraint should perhaps be emulated, but when one gives thought to other revelations in respect of the seeming importance of the vitamins in metabolism, one feels that this work of Fujimaki may be but the prelude to further investigation which may be productive of a practical means of preventing calculus formation in man, and possibly of successful non-surgical treatment of sufferers from all three forms of calculi. W. H. HATTIE

NON-TUBERCULOUS PULMONARY DISEASES

THAT the above subject is again looming up in the forefront is evidenced by the symposium on non-tuberculous pulmonary diseases which was included in the programme of the United States National Tuberculosis Association held in Indianapolis in May, 1927.

Important and interesting work on this subject is being done by Dr. David T. Smith of Ray Brook Sanatorium, New York State. He has carefully analyzed 100 cases of broncho-pulmonary spirochætosis, including 14 of his own from the Tuberculosis Sanatorium at which he is working. The disease may take any one of twelve forms, *i.e.*, lung gangrene, lung abscess following tonsillectomy, lung abscess following extra respiratory operations, lung abscess complicating neoplasm of the lung, lung abscess associated with a foreign body in the lung, primary or spontaneous lung abscess, unresolved pneumonia, acute bronchitis, bloody bronchitis, putrid bronchitis, chronic bronchiectasis and any one of the above mentioned types associated with pulmonary tuberculosis. The organisms found are anærobic, and include the various spirochætes of the mouth, *B. fusiformis* and streptococci usually mixed in varying numbers. The important symptoms besides those usually associated with tuberculosis (cough, expectoration, fever, loss of weight, etc.) are hæmorrhage, foul breath and sputum separating in three layers on standing.

The importance of the above work lies in the etiological relationship and the correlation of various manifestations of the same disease in the lung; pulmonary abscess and gangrene on the one hand, and bronchitis and bronchiectasis on the other. Exactly which of the various micro-organisms mentioned above is the primary etiological agent or whether the disease is caused by a symbiosis of two or more is not settled. But the pathogenesis of the disease in all cases is allied to Vincent's angina or noma, the process essentially starting as an ulcer in the mucosa of the bronchi, and later by destruction of the elastic wall causing bronchiectasis. A plea is made for the early diagnosis of such conditions before bronchiectasis is established and at a time when they would

be susceptible to arsphenamin treatment, before postural drainage, which sometimes helps, becomes necessary.

Besides this more common non-tuberculous pulmonary disease, the internist should be on the look-out for cases which simulate tuberculosis but in which the rather unusual x-ray findings and negative sputum put this diagnosis in doubt. Such cases are often the result of infection with various fungi (monilia, aspergilli, etc.) 10 of which cases, due to an aspergillus were recently reported by Lapham. Some of these cases clear up under potassium iodide treatment. ARNOLD BRANCH

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THE CURABILITY OF INTESTINAL TUBERCULOSIS

UNTIL comparatively recently a diagnosis of intestinal tuberculosis was synonymous with fatal prognosis. In other words, it occupied in the minds of the profession much the same position as pulmonary tuberculosis did fifty years ago. The work of Brown and Sampson should tend to allay such a gloomy outlook. These authors, in 1919, published a method for the early diagnosis by the x-ray of tuberculous colitis[1]. The essential x-ray feature is a state of hypermotility at the site of the ulcer which exhibits itself in the fluoroscope or film as a filling defect in the diseased portion of the intestine, usually the cæcum. The disappearance of this filling defect after months or years of observation they consider as definite evidence of healing.

Their latest paper on the "Curability of Intestinal Tuberculosis"[2] is an analysis of some 463 cases which have been observed over periods varying from one year to eight years. Three hundred and eighty-four of the patients were treated with ultra-violet radiation: Of these 70 per cent are alive, while of 79 who remained untreated only 20 per cent are living. The cases were all secondary to pulmonary tuberculosis, the lung lesion in the majority of cases being in the moderately or far advanced class.

At the Trudeau Sanatorium,[3] the Alpine and Burdick Lamps are used for ultra-violet radiation. Treatment is given every other day, with the lamp at high intensity and 30 inches distant. Exposure is made on the back and front, three minutes each for the first treatment, five for the second; this is increased two minutes each treatment until it reaches thirty minutes, when the lamp is moved nearer to the patient, some being able to stand a thirty minute exposure back and front every other day until the source of light is only twelve inches distant. The treatment should be carried on for as long as possible, even after the positive intestinal x-ray picture has disappeared, since in the authors' experience, if relapse occurs, as it occasionally does, the patient does not again respond to ultra-violet radiation.

The pathological evidence of healing was obtained from Dr. Leroy U. Gardner, of the Saranac Laboratory, who has observed healing in 13 of 32 cases examined, in five the healing being complete. In three cases there had been no specific treatment, so that undoubtedly some cases heal without treatment.

The relatively high percentage of filling defects found in patients with moderately advanced as well as far advanced pulmonary tuberculosis and the favourable results of treatment observed by Brown and Sampson make it incumbent on every tuberculous sanatorium and on practitioners treating cases of pulmonary tuberculosis at home to take routine intestinal x-rays and in any doubtful case to prescribe artificial heliotherapy. In the light of their experiences this complication, if diagnosed early and treated intensively, need cause no greater trepidation than the diagnosis of the pulmonary tuberculosis itself. ARNOLD BRANCH

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Editorial Comments

Dr. W. S. Thayer

The profession of Canada will note with pleasure the choice of Dr. William Sydney Thayer as President of the American Medical Association. Dr. Thayer at present is at the head of the medical wards in the Johns Hopkins Hospital, and in his earlier years carried out much important research work.

He has an especial link with Canada through his association with Sir William Osler, for it was in Osler's clinic at Johns Hopkins Hospital that Dr. Thayer carried out his investigations on malaria and on gonorrhœal endocarditis and septicæmia; and this link has been maintained by frequent and welcome visits. Dr. Thayer played his part in the Great War, first as a major in the medical section of the Officer's Reserve, and later on active duty, serving subsequently as Director of General Medicine in the American Expeditionary Force, and afterwards as Chief Consultant in Medicine; finally he attained the rank of Brigadier-General. He has received recognition from many foreign medical societies, and is now on the eve of his departure for England, where he will deliver the Bright Lectures in clinical medicine. The American Medical Association has chosen well and wisely in committing its policies to the guidance of one so well qualified for the work.

The Value of Clinical Teaching and the Importance of Preventive Medicine

We have much pleasure in calling attention to the opening of the imposing new building for the Department of Hygiene and Public Health in connection with the University of Toronto, by Sir George Newman, Chief Medical Officer of the Ministry of Health of Great Britain. At a banquet given in his honour, by the Governors of the university, Sir George Newman, in answer to a request from Canon Cody for a criticism of medical education in Canada, stated that in his opinion it was possible to make the course of medical instruction too long, thus preventing students without considerable financial support from entering the field. He emphasized strongly the necessity for careful clinical teaching. The laboratory must be used as an instrument, but not always as the chief court of appeal; he was a strong believer in the great benefit to be derived by the student from practical work. He was also very pleased to note the tendency in Canadian universities to lay stress on the term marks obtained by students, in preference to placing dependence entirely on the results of a final examination. He also was convinced of the value of the effort being made throughout the Dominion to familiarize, by means of post-graduate lectures the general practitioner with every advance in science, particularly in regard to preventive medicine. There can be no general advance, he said, in public health until the general practitioner who is in close touch with the people, is fired with the ideals of prevention as well as of cure. We are convinced that these important statements by Sir George Newman will be deeply appreciated by every Canadian university and by the profession generally.

Provision Made for Rheumatic Children in London

Since the report of the British Medical Association Committee on Cardiac Disease in Children, the Metropolitan Asylums Board has made a definite move to provide more beds for the treatment of London children suffering from rheumatic disease. For this purpose, Queen Mary's Hospital for Children at Carshalton, 12 miles out of London, which has at present 900 beds for acute tuberculous cases, is to be provided with 350 additional beds, for the treatment of rheumatic cases. The new accommodation is to be for children of both sexes under 16 years of age, who are suffering from rheumatic fever, and especially from rheumatic carditis. As the enlargement of the hospital will take some time, the Board has decided to open at once 56 beds in Highwood Hospital for such children demanding immediate and urgent treatment.

In adopting these measures, the Board had before it a report presented to the London County Council by its medical officer, in which it was stated that in the London area alone, not fewer than 10,000 children are suffering from rheumatic fever or its sequelæ. The great majority of these are not in need of special treatment but do require some supervision. About 1,000, whose hearts are seriously and permanently injured attend special schools, but there are between 600 and 700 children who are absent from school for long periods on account of rheumatism. These last represent 25 per cent of the chronic invalidity among school children and for them the special arrangements now proposed to be made are necessary.

We note that a Mosquito Control Institute has been organized in Great Britain. Since the anti-mosquito compaign was begun at Hayling Island about seven years ago, it has become

evident that the work, so successfully accomplished there, was of more than local interest. The medical officers of health and the sanitary inspectors in many parts of Great Britain found it desirable to obtain the latest information as to how to keep mosquitoes under control. The Natural History Museum in London is always willing to identify specimens, and give information on the best methods of dealing with them, but it is left to local authorities to carry on the actual field operations by which the mosquito nuisance may be reduced or eliminated. This practical knowledge is available at the Mosquito Control Institute at Hayling, and we are informed that its officers will afford information to all who are interested in the subject and are desirous of getting rid of the pests which make life out of doors almost intolerable in certain months of the year.

On Pulmonary Embolism

Two interesting studies have appeared recently in literature, on the cause of pulmonary embolism, which, while they may throw new light on this serious post-operative complication, arrive at quite different conclusions. W. A. Lister[1], in a statistical investigation regarding the causation of pulmonary embolism following operation, compared records taken at random from 4,000 major operations. In this record of 4,000 operations 195 cases of fatal pulmonary embolism occurred. There were no indications according to Lister that sepsis exerted any influence in giving rise to massive embolism. There did not appear to be any undue rate of incidence among the operations in which powerful retractors were used; or in nephrotomies or in Halstead's amputation of the breasts. The effect of such factors as hæmorrhage and shock could not be determined. The chief factors favouring the incidence of embolism appeared to be the more advanced age of the patient and the fact of an incision through the anterior abdominal wall, thus interfering with the action of the diaphragm in maintaining the circulation in the large abdominal veins.

The second study of this condition was by Rosenow,[2] who, as a result of his investigations regarded as the important, if not the most important factor in the development of emboli, to be the presence of the Gram positive diplo-streptococcus. Not only was this diplo-streptococcus isolated in numbers from six recent fatal cases, but also from pulmonary emboli that had been preserved in solution of formaldehyde since 1925. In none of these cases had there been septic fever. In 18 the operation had involved an abdominal incision; 12 of the patients were less than 50 years of age. In all but 2 of the 25 preserved emboli, Rosenow states that he found a diplo-streptococcus identical with the organism isolated from the recent cases. With four strains of this diplo-streptococcus, attempts to produce thrombosis in laboratory animals were successful.

References

1. Lister, W. A., *Lancet*, Jan. 15, 1927, p. 161.
2. Rosenow, E. C., *J. Infect. Dis.*, 1927, xl, 389.

The Manitoba Sanatorium has sent us its 16th annual report, which includes "A Statement of work done, work to do and present needs". Amongst a great deal of interesting material, there is an excellent note on how the sanatorium regards infections of the bronchial tract, other than those of a tuberculous nature. It is claimed and very rightly we think, that men who treat tuberculosis as a specialty cannot but have more skill than the average in dealing with conditions which are similar to tuberculosis and are every day confused with it.

We note in the June number of the *Nova Scotia Bulletin* extracts from the findings of the Royal Commission on the mental defective problem in Nova Scotia. The problem as is pointed out is not peculiar to that province, but the fact that it has become acute in Nova Scotia is considered to be due largely to two main factors, *i.e.*, the steady stream of emigration, and the almost entire disregard of these problems in the past.

Three main schemes for dealing with it have been proposed: (1) sterilization of all those mentally deficient below a certain point; (2) segregation of the mentally deficient for life; (3) adequate training of the mentally deficient while they are young, and life segregation of those of a very low grade.

The Vancouver Medical Association Bulletin for June contains the programme of the Summer School Clinics held in June. Several papers of interest will be presented.

The American Medical Directory

The American Medical Association has issued the Tenth Edition of its all-embracing Medical Directory. This Directory is referred to as a register of legally qualified physicians, but those familiar with it realize how inadequately this describes the extensive range of information it contains. It contains the important details of all the medical training centres on the North American Continent, of hospitals and sanatoria, of medical libraries and medical journals (the latter being a truly portentous list). It also supplies all necessary information regarding the

legal requirements for medical practice not only in the various states of the Union but also in the several Provinces of the Dominion. By many in Canada it must be regarded as an indispensable source of general information not only on account of the great number of facts collected, but also on account of the careful manner in which they have all been verified.

Imhotep: the First Physician

Last year attention was called to the history of Imhotep the famous architect and physician of King Zoser who reigned about 2980 B.C. In the *British Medical Journal* (April 16, 1927) attention is again drawn to his architectural abilities not only as builder of the earliest pyramid, the Step-Pyramid at Sakkarah not far from Cairo, but to some remarkable temple buildings recently brought to light by excavations at the base of this pyramid, which were also constructed by Imhotep probably at the same time as the pyramid. Amongst these discoveries is a beautiful colonnade eighty-five yards long, composed of forty-eight columns of white limestone arranged in pairs and forming the main approach to the pyramid enclosure. These columns are fluted, and carry remarkable foliage and papyrus capitals, thus revealing an architectural style, which archæologists had not previously met with until a thousand years later. There are also halls finely decorated with blue tiles and exhibiting curious false doors, each ornamented with portraits of King Zoser in different costumes and attitudes. Even more recent than the discovery of these extensive temple buildings is the finding of a mastaba or grave close to the Step-Pyramid, which it is suggested may perhaps be the actual tomb of Imhotep himself, the great architect and physician who so impressed his fellow countrymen with his skill as a healer of disease that after his death he was raised first of all to the status of medical demigod, and subsequently to that of full deity of medicine. Whether this surmise is true time only will show, but if the adscription should prove to be correct an interesting chapter could be added to the history of Imhotep. Owing to the climatic conditions of Egypt further excavations must be postponed until next winter, when possibly important revelations bearing on the early history of medicine may be forthcoming. Already, however, enough is known of Imhotep, "the first figure of a physician to stand out clearly from the mists of antiquity," to raise the question whether he, a man of flesh and blood, should not be substituted for his younger and semi-mythical rival Asklepios as the patron deity of medicine.

Men and Books

SIR JAMES MACKENZIE*

By H. P. Wright, M.D.

Montreal

The story of a man who rose from a poor Scottish family to the highest ranks of so-called specialism in London and then, because of his dislike of specialism returned to St. Andrews to study the early signs and symptoms of disease from the point of view of the general practitioner is such a wonderful life story and an example of enthusiasm with capacity for detailed observation in the general practice of medicine, that whether we accept his teachings or not, Sir James Mackenzie will always be a source of inspiration to every practitioner of medicine in whatever field he may be working.

James Mackenzie was born on a farm in the County of Perthshire on April 12, 1853. He did not particularly distinguish himself in his early career at school; for in later life he said that the thing he remembers most clearly during this period was: "That I was considered the dunce in most of my classes, and the subjects in which I did well were those in which my understanding rather than my memory was called into play." He left school at the age of fifteen at his own request, expressing himself as terribly weary of the place, and became an apprentice to a chemist in the city of Perth, influenced, apparently, by the great jars of coloured water, which glowed with seductive brilliancy in the druggist's window. After a year the routine at the chemist's shop tired him, and he longed to be quit of his apprenticeship; the lad's mother, however, gave herself earnestly to the task of cheering him up and encouraging him to stay until his term was fulfilled; so through her agency the young knight suffered that discipline of the spirit, which is a needful prelude to any great adventure. During this period of apprenticeship he devoted what leisure he could command to reading.

The earnings of an apprentice in those days were not considerable, and for the work of his first year he was paid only five pounds. On receiving the first half of this amount at the end of six months, it is stated that he ran all the way home in his eagerness to give the money to his father.

Having served his apprenticeship he decided

* Read at a meeting of the Osler Reporting Society, Montreal, Feb., 1927. Based largely on R. M. Wilson's "The Beloved Physician."

to become a doctor, but was afraid again of precipitating himself into a profession which he might not care to follow, so he took up a position with a chemist in Glasgow. At the end of that year's work, as he still felt desirous of entering medicine, he set himself to work to prepare for his matriculation, so that he was 21 years of age when he went to Edinburgh, and began the study of medicine—and was therefore about four years older than the majority of men in his year.

In the early scientific part of his studies, Mackenzie had difficulty in passing the examinations, but when he began the so-called clinical work a marked change occurred, and in his last year at the University he actually won three medals. Years later, with his own experiences in mind he wrote:

"There are two very distinct qualities in the human mind, memorizing and the power of reason. The earliest to be developed is that of memory, and this can be cultivated with great ease. The power of reasoning is quite different, although no doubt memory takes a part. When we look at the great number of students we discover that this power of memory is greatly developed in a few, and that all our educational methods are devoted to its cultivation. Examinations are specially contrived for the purpose of discriminating those with the best memories, and to these all the honours and prizes are given. The individuals, who on the contrary, possess more of the power of reasoning than their fellows receive no consideration. There are minds which have difficulty in remembering isolated facts, but if these facts are related in some consecutive manner, they can not only remember them, but also appreciate their bearing on one another; but this type of mind is slow in acquiring knowledge and in our present-day methods of education less and less encouragement is given to this type of student. His peculiar powers are never developed and their presence is never suspected. The outcome of the teaching of to-day is to hail the student with the superior power of memorizing as the brilliant student; the one with the great future. The consequence is, that his path from the outset is made easy for him. Bursaries and scholarships fall to his share and before he has acquired any experience he is appointed to a teaching post; in the absence of knowledge acquired from the result of his own observations, he is forced to teach that which he was himself taught, and as he cannot discriminate between truth and superstition he hands both on to his students. As years pass he comes to believe that what he has taught is true, and may even grow impervious to new ideas, which are contrary to the beliefs he has been expounding."

These words from the pen of Mackenzie indicate his own personal experience and explain the very practical advice which he was often wont to give.

After graduating he spent a year in the Edinburgh Royal Infirmary, and then in the year 1879 went to the town of Burnley in Lancashire as assistant in the firm of Dr. William Briggs and Dr. John Brown. It was not long before Mackenzie began to interest himself profoundly in the skill of Dr. Briggs. At Edinburgh the medical world was concerned in discovering exactly what was wrong with the sick man. At Burnley Dr. Briggs seemed to think it was more important to know what was going to happen to the man and how to prevent it.

Mackenzie was convinced that every ailment could be identified and named, and this he tried to do, and in his despair bought an enormous medical encyclopædia consisting of volumes as big as pillows. He writes: "For some years I thought that my inability to diagnose my patients' complaints was due to personal defect, but gradually through consultation, and in other ways I came to recognize that the kind of information I wanted did not exist." This was an important discovery for the self-styled dunce of Perthshire.

From the time of this discovery Mackenzie seems to have been released from the traditions of so-called authorities, and demanded that the statements of those regarded as masters in medicine should satisfy the enquiries of his own mind.

Mackenzie studied each case as if he had never seen one of the same kind previously, and he never lost his enthusiasm in clinical medicine during his lifetime. The method of research that he now began to employ in his general practice was to observe, note, wait and watch. What he wanted to know was the exact meaning of the signs and symptoms he met with every day. This, of course, was a large order and very probably he might have arrived at no real accomplishment had not a tragic incident occurred in his practice. One night he was summoned to help a young woman in the pains of child-birth. She was a patient of his, a young girl whom he had visited during the period of her expectancy, and whom he had examined. The case promised to be easy, nevertheless, the girl died from heart-failure, before the child was born. James Mackenzie returning from breaking the news of her death to her husband suffered bitter anguish, and asked himself frequently whether there had been present before the time of delivery signs or symptoms which might, had he recognized them, have served as warnings to him. He resolved to obtain more knowledge and began by studying the mechanism and character of the symptoms usually supposed to indicate heart trouble. It was thus that Mackenzie became specially interested in diseases of the heart.

He is described at this time as travelling around the country with a sphygmograph taking tracings in all obstetrical cases. He soon learned that there were different kinds of irregularities in the heart action. One can imagine the young doctor in despair among his varnished tracings. The riddle of the waves: what was the answer?

About this time he noticed that not a few sick people had pulsating veins in their necks, and we find him endeavouring to study this venous pulse; but he met with difficulties in obtaining tracings from the vein. After many

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failures he hit on the idea of fixing straws on the neck with a little gum. The straws were so light that they moved with each throb of the veins, and this movement he transferred to smoked paper by allowing each straw to act as a pen. It was a crude venous tracing, but a wonderful invention for a man steeped in the cares of general practice. Soon after this he invented his sphygmograph by which he obtained an accurate venous tracing to compare with the arterial tracing. By this instrument he learnt that wave No. 2 in his venous tracing was caused by the pulsation of the carotid arteries, and wave No. 1 by the beating of the right auricle of the heart. In other words, wave No. 2 was caused by the left ventricle of the heart and wave No. 1 by the right auricle. The nature of wave No. 3 remained obscure, but a great advance had been made. He was now able to recognize the pulsations of the two separate chambers of the heart.

This little pocket sphygmomanometer appealed to the medical and public mind vividly as all mechanical inventions have a tendency to do. Mackenzie became famous through its agency. This manner of fame however was in some ways a tragedy for him for he was interested chiefly in the fundamental principles. Years later he wrote: "When I see the modern cardiologist getting his assistant to take an x-ray photograph of the heart, and an electro-cardiogram, or even a blood pressure reading, and then behold him sitting down to study these reports, I am truly amazed. I never could have realized that the practice of medicine could have become so futile and ineffective."

All this time he was very busy in his general practice, but it is worthy of note that he found time to play golf in the afternoon a couple of times a week, and, as is reported of him, that he never seemed to be in a hurry or short of time.

It was about this time that he discovered that the chambers of the heart might fail to keep step with one another; that their contractions were not in proper rhythm. His investigations were being pursued along two definite and distinct lines: he was trying on the one hand to find out how ill health was produced, and on the other hand he was watching to see what would happen to the men, women and children who showed certain symptoms. Frequently comparing his numerous tracings, he began to draw conclusions. He was able to reassure many with extra-systoles and sinus arrythmia, —that youthful type of irregularity—cases of which up to that time had been regarded with great seriousness and ordered to lead very restricted lives. It so happened that one of the first patients Mackenzie had when he began practice in London was a girl with sinus arrythmia; she had already spent three months in bed, and had been undergoing the Nauheim treatment. He told her to get up, and go on with her life, and this she did.

After years of observation on what he considered the "dangerous type of irregularity" met with in cases of mitral stenosis, he at last obtained tracings which, in conjunction with the changes detected in the presystolic murmur, justified the conclusion that the auricles of the heart had ceased to beat; in other words, that the condition, which we now refer to as auricular fibrillation had supervened.

Mackenzie's mind was now opened to one of the most fundamental facts in medicine, namely: that the power of the heart depends on the efficiency of its muscular walls, first, last, and all the time; and the realization of this principle became the guiding note in all his future work with heart failure in damaged valves, in angina pectoris, in the dangerous type of irregular action, in pneumonia and in typhoid; all depended entirely on the efficiency of the heart muscle as a blood pump.

Mackenzie now proceeded to study his new principle that a sign or symptom associated with heart action is significant only in so far as its presence indicated the onset of failure of the heart muscle.

Mackenzie found difficulty in getting his ideas accepted, and it seemed inevitable to a mind like his, that an attempt should be made to convince the medical world. The medical world was London, therefore he resolved to go there, and at the age of 54 he left a comfortable practice, and an ever-increasing reputation and hung out his plate in London where he was not wanted.

His great book written during his first year in London fell among the professors like a live bomb. It contained not merely a good account of various diseases of the heart known to medical science, with each disease illustrated by dozens of tracings, and each analyzed with the most amazing care, but its chief title to fame was its immediate practical utility to the general practitioner.

Mackenzie's success in London after he had been accepted by the medical profession was phenomenal. A specially created department was made at the London Hospital for him. He was elected a member of the Royal College of Physicians, and invited to become a Fellow of the Royal Society, and knighthood soon followed these professional honours.

A great joy possessed him; his teachings were now bound to reach the whole world. English, Americans, French and Germans, all the medical world came and worshipped, but not so much him as his instrument of precision. Thus a strange situation was brought about. Mackenzie himself was primarily a clinician, and was chiefly interested in impressing on the profession the importance of the early symptoms of heart

failure, but the medical world was principally interested in his polygraph.

His gospel first, last, and all the time was clinical observation of the patient, observation of function, and bed-side work. As time went on he learnt that his message was not being accepted, and he began to feel forlorn in London, and possibly a little wearied with the size of his consulting practice; for he was now one of the busiest physicians in London and making between £8,000 and £10,000 a year.

It was about this time that Professor Waller called upon him in Harley Street and demonstrated Einthoven's string galvonometer. Mackenzie hailed the discovery as a most interesting confirmation of the work, which he had already accomplished with his polygraph. He realized, however, that he did not have the time, and was not at the right age to take up the clinical application of this electrical instrument, so he turned it over to his disciple, Sir Thomas Lewis, who has since attained international fame through his work in heart disease, particularly as interpreted by the electro-cardiograph. Mackenzie generously applauded Lewis as a man of science, but he deplored the advent of another *deus ex machina,* in the electro-cardiograph. One can imagine Sir James shaking his head over this latest machine and thinking what a sad state of affairs had come about when it was necessary to make all this fuss over the examination of the heart. The prime factor to him was: is there heart failure? And this question he thought he could answer without any apparatus at all, simply through the application of the physical senses with which he was endowed.

His spirit began to grow weary within him. The great war was being fought. The Heart Hospital at Hampstead had been organized in which he saw his principles were employed; he felt his work in London had served its purpose. So in the year 1918 at the age of 65 years he left London, and his remunerative practice and turned again to the north deciding to devote the remainder of his life to research. He founded an institute in conjunction with the general practitioners of St. Andrew's, "The Institute for Clinical Research"; the chief aim of which was detailed observation of cases in order to ascertain the significance of early symptoms.

Shortly after his arrival there, Mackenzie was stricken with angina pectoris, and recognized that in all probability his life was not to be much longer, still he continued his work, his long distance consultations, and his golf. Gradually it became necessary to lessen all his exertions, 18 holes instead of 36 holes, eventually only 1 hole, and then he put his clubs away for the last time. He could not walk to the institution, and he resigned from the directorship. In the early days of 1924, he was compelled to go to bed and on the night of January 25th, he went serenely to his rest.

Like many prophets Mackenzie's message was not altogether accepted during his life-time. The man himself was lauded and heaped with honours, but not as a reward for the thing for which he cared most. To many his reaction against the laboratory seemed too strong.

Co-operation between laboratory and clinical workers is essential. Domination by one is not healthy. Mackenzie certainly regarded the matter in this light for he undoubtedly respected the opinion of the laboratory worker, but he was not over-awed by a report from the department of pathology, bacteriology, or metabolism, and did not feel that the story of the progress of medicine would be entirely written from within the walls of the hospital or university laboratory.

THE FOURTH CHAPTER IN THE HISTORY OF PATHOLOGY

By Albert G. Nicholls, M.D.

Halifax, N.S.

To Morgagni we owe the concept that the causes and manifestations of disease are to be looked for in the various organs. His work was destined to administer the *coup-de-grace* to the doctrines of the ancient and all-pervasive humoral pathology. Henceforth men were to think "anatomically", and, indeed, "organically," about disease. But the new thought was slow to come into its own. Theory for long remained entrenched against the onslaught of fact. In truth the vitalistic notions of the Montpellier school, headed by de Bordeu and his pupil Barthez, and the teachings of Gaub, who, influenced by Haller, conceived of "irritability" as a pathological increase of vital force, and applied this idea to disease, were much more to the taste of the time than were the observations of the Italian master. It was a full generation, indeed, before anyone appeared to wear the mantle of Morgagni. The man was Matthew Baillie, whose *Morbid Anatomy* (1793), a production recalling that of Morgagni, but much more systematic, may properly be regarded as the first modern textbook on morbid anatomy. This work had a tremendous vogue in England and on the continent, and did much to popularize the better way of thinking. From now on, the Morgagnian concept gathered momentum, to reach its apotheosis in the work of the Vienna school and notably in that of Rokitansky.

Highly important as it is, the study of gross morbid anatomy is far from establishing a philosophy of disease. That this is true can be gathered from a perusal of the first edition of Rokitansky's *Handbuch der pathologischen*

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Anatomie (1842-46), in which the author, undoubtedly the greatest morbid anatomist of his time, introduces a cumbersome and bizarre terminology, based on an absurd doctrine of "crases" and "stases", and endeavours to rehabilitate the old theory of solidism and humoralism.

The impetus to a forward movement came from Marie-Francois-Xavier Bichat. He it was who first gave a detailed description of the organs and tissues of the body, both in normal and abnormal conditions, thus becoming the forerunner of Henle and the school of histologists. Bichat recognized twenty-one kinds of tissues, each unrelated to the others, and each endowed with its own special form of vitalism. He did not use the microscope, and must be regarded as a vitalist after the order of de Bordeu, but, nevertheless, his influence was all to the good. He directed attention to the finer structure of the animal body, and the improvement in the microscope made possible still greater refinement. Studies on the morphology and derivation of cells became intensive during the next fifty years, and, based on these, an entirely new conception of disease processes was eventually introduced.

The great questions to be decided were, the nature of cells, their structure, their derivation, and their relation to tissues, and much investigation had to be done before a truthful and coherent story could be worked out. There is, as a matter of fact, so much material of the first order that selection is difficult. It is, indeed, a case of men labouring and many others entering into their labours. As has happened in other spheres the botanists seem to have blazed the trail. Hooke (1665), Malpighi (1675), and Grew (1682), had been perhaps the first to notice the cellular spaces in cork and green plants. The cell-nucleus was discovered by Robert Brown in 1831—a long jump in time—and the nucleolus, by Gabriel Valentin in 1838. In 1838, M. J. Schleiden of Hamburg proved that vegetable tissues are developed from groups of cells, and, farther, regarded the nucleus as the important factor. About the same time, Schwann discovered nucleated cells in animal tissues, and was led to make the most important generalization in the science of morphology, that, "there is one universal principle of development for the elementary parts of organisms, however different, and that principle is the formation of the cells." Thus was enunciated the doctrine of the structural similarity of animal and vegetable tissues. Schleiden thought that the young cell originated spontaneously from the nucleus (cytoblast), which he considered to be embedded in the solid cell-wall. The new cell rested upon and spread over the cytoblast as a watch-crystal covers a watch (Uhrglastheorie). To this conception, Schwann added that of the "cytoblastema" or matrix of cell development, analogous to the mother liquor from which crystals start. By 1841 Martin Barry and Robert Remak had noticed division of the nucleus, and this was confirmed in 1845 by Goodsir, who laid down that the nucleus is the "germinal centre" of the cell.

Nor was the cell body forgotten. It was soon found that cells existed which had no definite wall. Von Mohl introduced the term "protoplasm" (1846), and Ferdinand Cohen (1850) asserted that vegetable and animal protoplasm were analogous, if not identical, substances.

Observations, too, were not lacking which went to prove the doctrine of the continuity of cell development. Cruickshank (Hunter's assistant, and Hewson's successor) and Mascagni demonstrated that the secretory canals in the mammary gland commenced in cells. E. H. Weber, studying the salivary glands and pancreas of birds, came to the conclusion that the gland acini are the direct continuation of the ducts. Johannes Müller clinched these observations by a wide range of studies on all the glands, both in invertebrates and vertebrates. Remak was one of the first to prove (1852) that the proliferation of cells to form tissues is brought about by division of the cells, and not by endogenous formation, as Schleiden and Schwann had thought. All now was set for the appearance of the great master Virchow.

Rudolph Virchow (1821-1902), a native of Schievelbein in Pomerania, was one of the most outstanding figures of his time. A man of wide culture and deep human sympathy, he was at once anatomist, pathologist, anthropologist, archæologist, sanitarian, journalist, teacher, social and political reformer. Entering upon a promising career in Berlin, his liberal views soon brought him into conflict with "the powers", and he was obliged to leave, fortunately obtaining the chair of pathology at Würzburg, where he remained for seven years, making for himself a brilliant reputation as scholar and teacher. Then, his difficulties with the authorities being accommodated on honourable terms, he returned to Berlin as Professor of Pathology and Director of the Pathological Institute, where he was destined to attain still greater distinction.

In 1858 appeared his epoch-making work, the *Cellular Pathologie*. In this book, which is nowadays more often praised than read, the author manifests everywhere the spirit of his great teacher, Johannes Müller. It is the outcome of a series of twenty lectures to the medical men of Berlin, and is based upon normal and pathological histology. Its purpose may be best exposed in Virchow's own words, taken from the preface to the first edition, namely, "to furnish

a clear and connected explanation of those facts upon which, according to my ideas, the theory of life must now be based, and out of which also the science of pathology has now to be constructed. They (*i.e.* the lectures) were more particularly intended as an attempt to offer in a better arranged form than had hitherto been done, a view of the cellular nature of all vital processes, both physiological and pathological, animal and vegetable, so as to distinctly set forth what even the people have long been dimly conscious of, namely, the unity of life in all organized beings, in opposition to the one-sided humoral and heuristical (solidistic) tendencies which have been transmitted from the mythical days of antiquity to our own times . . . . ." The book is dedicated to "John Goodsir, F.R.S., etc., Professor of Anatomy in the University of Edinburgh, as one of the earliest and most acute observers of cell life, both physiological and pathological."

Virchow points out that in the past every advance in medicine has been heralded by some great anatomical innovation. Thus, the anatomical investigations of the Alexandrian School paved the way for Galen; Vesalius made possible the real reformation of medicine; and Bichat, curiously, since he was not a microscopist, provided the stimulus for the study of the finer structure of the body. We may add that the work of the cytologists inspired Virchow to work out for himself the life history of the cell, and to apply the principles that he uncovered to the elucidation of the problems of disease. He was led to discard the "hour-glass" theory of Schleiden and Schwann's "cytoblastema" as not being supported by one single fact, and enunciated in clear terms the theory of continuous cell multiplication, which he paraphrased from the old postulate of Redi and Harvey: *"Omne vivum ex ovo"*, as *"Omnis cellula e cellula."* It was Virchow's great merit that he was the first to express in unmistakable language a correct cellular theory, and to realize that the same laws are at work both in normal and abnormal processes. Every diseased cell, whether hypoplastic, hyperplastic, or even neoplastic, has its prototype in some normal cell. There are, in other words, no specific cells in disease, but only modifications of physiological types. For Virchow, the body is "a cell state in which every cell is a citizen." Disease is "merely a conflict of citizens in this state, brought about by the action of external forces." Great as it was, Virchow's work was not free from error. He laid too great stress, for example, on the cell-contents as the controlling feature of the whole organism. It seems strange to us to find him writing the following: "Whilst until quite recently it was the custom to look upon inflammation as a real entity, as a process everywhere identical *in its essence*, after I made my investigations no alternative remained but to divest it of all that was ontological in it, and no longer to look upon the process as one differing in its essence from other pathological processes, but only to regard it as differing *in its form and course.*" It appears strange that he derives pus-cells from epithelium and connective tissue. Waller, in 1846, had published observations on the diapedesis of blood cells, and his own pupil, Cohnheim, placed the fact beyond question. Virchow's work is based entirely on morphological considerations, and is, therefore, to that extent incomplete. To his last day Virchow could see little of value in the studies of Koch and Behring. But the *Cellular Pathologie* established for us a sound basis from which to make a new flight. Such criticisms as the above merely point out spots upon the sun. Virchow's work has made it possible for us to establish a true and adequate philosophy of disease.

DAME ALDRICH BLAKE

Dame Aldrich Blake, the story of whose life has been recently written by Lord Riddell* demands more than a passing notice, as she did more than any other person to place the Woman's Medical School and the Royal Free Hospital on a sound footing.

As a student of the University of London, she won prizes in pathology, surgery, medicine and operative midwifery. At the age of 27, she qualified to practise by taking an M.B. degree, with first class honours in medicine and obstetrics, and in 1893, secured the Bachelorship of Surgery with first class honours, and qualified for the Gold Medal. In 1895 she gained her crowning glory by becoming a Master in Surgery of London University, the first woman to obtain the much coveted degree.

Miss Blake had much character, but character more of the manly than of the womanly type. As a student she was not brilliant, but she had the rare gift of intense concentration, and won her honours by hard work. She specialized as a general surgeon, and held many important posts in woman's hospitals. In 1914 she was appointed Dean of the London School of Medicine for Women.

Dame Blake was an excellent operator; deliberate, attentive to all details, and careful rather than speedy. She possessed the important qualities of clear critical judgment, presence of mind, and the power to inspire confidence in the patient. Her presence was dignified and commanding. She was an expert in organization

* *The Life of Dame Aldrich Blake* by Lord Riddell, Hodder and Stoughton, Ltd., London.

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and hospital management, and did great work for her beloved school during the years she was at its head. In war work she took great interest and laboured without stint.

The writer of her life, Lord Riddell, had been her intimate friend for many years and was well acquainted with her work, both in the medical school and at the Royal Free Hospital.

Dame Aldrich Blake owing to her high character and her work in the School of Medicine for Women will be honoured by all women physicians and surgeons in every country.

Miscellaneous

THE OPENING OF THE NEW SCHOOL OF HYGIENE, UNIVERSITY OF TORONTO

On June 9th Sir George Newman, Chief Medical Officer of the Ministry of Health of Great Britain, formally opened the building which now houses the School of Hygiene and the Connaught Laboratories of the University of Toronto. Sir George arrived in Toronto on June 7th and for the following three days his time was fully occupied with appointments.

The morning after his arrival he officiated at the opening of the new laboratories of the Hospital for Sick Children. The same evening the Connaught Laboratories, with Professor Fitzgerald acting as host, entertained, in honour of Sir George, at dinner at the Toronto Hunt Club. The guests of the evening were the heads of the departments in the Faculty of Medicine of the University, and a few others who had associated themselves with the activities of the University. Canon Cody, Chairman of the Board of Governors of the University, and Dr. F. N. G. Starr, President-elect of the Canadian Medical Association, welcomed the guest of the evening. Canon Cody emphasized Sir George's numerous and important responsibilities; as Chief Medical Advisor to the Board of Health and to the Board of Education; as Medical Assessor for the Imperial Universities Grants Commission; as Treasurer of the General Medical Council, and as a director of the Dartford School of Physical Training for Women, and in proposing the toast to Sir George, he asked him to advise the lines along which, in his opinion, medical education in Canada should progress. In his reply Sir George made the very interesting remarks which we quote in an editorial in this issue.

At 10.30 a.m., June 9th, the School of Hygiene Building was formally opened. Before a representative gathering in Convocation Hall Sir Robert Falconer and Canon Cody introduced the chief speaker. In his introductory remarks Canon Cody brought out the following interesting facts. It is a mistake, he said, to think that a provincial institution such as the University of Toronto, receives no benefactions. This University has already received Hart House, numerous gifts to the hospital, the Eaton gift for Medicine and Pædiatrics, the gift of $1,000,000 from the Rockefeller Foundation, the Whitney bequest for $400,000, numerous scholarships and bursaries from various sources, and now this beautiful building, the new School of Hygiene, from the International Health Board of the Rockefeller Foundation. Dr. Cody wished to express the sincere gratitude of the University to the Rockefeller Foundation for this building and its equipment. He went on to describe what he called "the romance of the Connaught Laboratories." In December, 1913, the work of these laboratories was begun under the direction of Dr. J. G. Fitzgerald in a small stable near the University. The project received the sympathetic support of Sir Edmund Osler and Sir Edmund Walker. From this modest beginning the laboratories have steadily advanced. In 1915, thanks to the generosity of Colonel A. E. Gooderham, a farm of 50 acres was secured twelve miles from the University. On this property were erected very complete laboratories and stables for the production of Public Health Biological Products. The University section of the Connaught Laboratories will be housed in this new School of Hygiene, the gift of the Rockefeller Foundation. Dr. Cody outlined the events which led to this magnificent gift. Foremost in this connection he placed Dr. Fitzgerald's own work and personality. The achievements of the Connaught Laboratories are well known in this and other countries. Dr. Vincent and Dr. Russell of the Rockefeller Foundation visited Toronto and inspected the existing laboratories. They saw the Department of Preventive Medicine under Dr. Fitzgerald. They found an excellent medical faculty, a well equipped hospital near the University, and admirable provincial and municipal departments of public health. They finally asked Dr. Fitzgerald what could be done for the public health in Toronto. The new building is the result of this request. It was Dr. Fitzgerald's idea that the various activities of the School of Hygiene and the Connaught Laboratories should be housed under one roof. "Dr. Fitzgerald possesses," said Dr. Cody, "a rare combination of brilliant administrative abilities and an equally brilliant knowledge. In all his work he has been aided by his Chief of Staff, the Associate Director, Dr. R. D. Defries."

Sir Robert Falconer, after stressing the impor-

tance of the occasion, introduced Sir George Newman and called upon him to make the opening address. Sir George began his address by emphasizing the points already made by Canon Cody of the unique combination of activities gathered together in the School of Hygiene. He said that he had the honour of conveying to the University of Toronto in its new undertaking the good wishes of His Majesty's Government. Mr. Neville Chamberlain, Minister of Health, and Lord Eustace Percy, Minister of Education, were particularly interested in this milestone of Canadian medical progress. Sir George delighted his audience by a brief résumé of the history of medicine from the days of the Coans and the Nidians. As the followers of Hippocrates, chie of the Coans, we are carrying out the ideals of this ancient school. He referred to the great Anglo-Saxon names in medical history which are familiar to all—Harvey, Hunter, Jenner, Lister, Morton, Simpson, and others. He spoke of the number of virulent diseases that have been harnessed within recent years and the resultant increased expectancy of life. The public health authorities in Toronto were complimented on their splendid record of achievement in preventive medicine. The speaker commented on the fact that the maternal mortality rate is unnecessarily high in Canada. In conclusion, Sir George emphasized the fact that we are living in the Golden Age of Medicine, and that in the near future other wonderful discoveries will undoubtedly be made. After Sir George's speech, Sir Robert Falconer extended an invitation to those present to inspect the building, which contains the following sections: (1) the Department of Hygiene and Preventive Medicine of the Faculty of Medicine and also of the School of Graduate Studies; (2) the Department of Public Health Nursing; (3) the Section of Epidemiology and Vital Statistics; (4) the Section of Physiological Hygiene (Both of these sections are for research and teaching). (5) The Connaught Laboratories for research and public medical services, and the preparation of antitoxins, vaccines, insulin, and other biological products.

Facilities for research in all branches of the activities of the School of Hygiene are provided by the Research Division of the Connaught Laboratories. At the official opening of the School of Hygiene, at the request of the President of the University, Professor Fitzgerald announced that the Board of Governors had accepted the offer of the Connaught Laboratories to provide funds for three fellowships for post-graduate work in the School of Hygiene of the University of Toronto. These fellowships are for the term of one year and are to be known as the Connaught Laboratories Fellowships. The award carried with each fellowship is to be not less than $1,500.00 and not more than $1,750.00. The fellowships are to be awarded on the nomination of the Deputy Minister of Health, or corresponding official, of any one of the several provinces of the Dominion of Canada. There are not to be more than three fellowships granted in one year. Nominations for fellowships are to be received from the several provinces of the Dominion rotation.

MODERN MEDICAL LIBRARIES

We have drifted far from the days when the bibliothecarius, often a creature of pomp, pedantry, and quaint punctilio, and always a man of high and curious learning, corresponded on equal terms with a Leibnitz or a Milton. Such a man in the late seventeenth century was the famous scholar, Richard Bentley, who was King's li-librarian at St. James's before the days of the British Museum. He became Master of Trinity in the year 1700, but may be said to have inaugurated modern classical scholarship when still a librarian. The roll of honour of librarians can be vastly extended, for it ranges down to the days of Richard Garnett, Bradshaw of Cambridge, and the present Pope, and numbers in its middle period such names as Lessing and Casanova. Doubtless, the ancient librarians often dozed aloof, or like erudite silkworms spun their own webs of learning, undisturbed by readers. Now all that has been changed. The modern librarian is above all things practical. Indeed, in his laudable desire to be of use to an ever-growing host of students, as opposed to scholars, he is in danger of specialising in routine. This becomes almost painfully manifest when we consider an exhaustive report on "Methods and Problems of Medical Education" recently issued by the Rockefeller Foundation of New York. In this bulky pamphlet six medical libraries in different parts of the world, ranging from China to beyond Peru, to Brazil, and thence to Harvard and the Canadian Universities, have been fully reported upon by modern and able librarians. The general impression that will be left on the mind of any lover of a noble European tradition is that the library of to-day is a sternly efficient machine, an affair of typing, telephony, electricity, but hardly a home of abstruse research and reverent bibliography. We hear little in this report of rare and precious works. Indeed, in one fine American institution, all books prior to the nineteenth century are referred to by a modern lady librarian as "antiques," and the classifica tion would appear to put John Hunter and his brother, also Sydenham, and many other permanent luminaries, in a fading glow. One of the glories of the Rockefeller enterprise is the Library of the Peking Union Medical College. Here there are 817 Chinese books, a surprisingly large number when we consider that at the beginning of the nineteenth century only one work on medicine produced in China destined to be of practical utility had come into public notice—there were, of course, others, and more may be yet heard of them. The one specially referred to is a translation by Sir George Staunton of Alex-

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ander Pearson's work on vaccination, published in Chinese type and illustrations at Canton in 1805. The title was translated for us by the late Sir Robert Douglas, the sinologist, and it ran thus: "English recently issued Vaccination Rare-Book." Jenner's discovery appealed to the Chinese almost from the first, and their century-long practice of vaccination is in strange contrast with their folk-medicine and the inclusion of tiger's eyes and other strange ingredients in their pharmacy.

The medical profession is perhaps better supplied than any other with exhaustive catalogues and library helps of every kind. In the fine library of the Harvard Medical School there are some 45,000 volumes, over 100,000 pamphlets, and the number of current periodicals is over 400. But the student is not left at sea among all this, for "the attendants in all the rooms answer all inquiries and try their utmost to supply the information desired." The librarians, Dr. Elliott P. Joslin and Frances Whitman, "take pleasure in giving assistance." We can well believe it, and the same may be said of medical librarians all the world over.

A library which promises very well, though it is at present small, is that of the Queen's University, Kingston, Ontario. It forms part of the large university library of 175,000 volumes. At McGill University the medical collection is extensive, amounting to some 60,000 volumes. It is more than a century old, having been founded in 1823. In connection with it is the specially erected Osler library for the housing of the 7,000 odd volumes, which it was the life work of that fine bibliophile, Sir William Osler to collect. It has a noble appearance, worthy of him whom it commemorates.—*Lancet*, May 7, 1927.

THOUGHTS BY A PHYSICIAN ON THE BATTLE OF THE MARNE

In the *Munchener Medizinische Wochenschrift* of April 15, 1927, is a review of a book entitled, "The Crisis in the Battle of the Marne," by Eugen Bircher, Swiss surgeon and in war-time, Lieut-General and Commander of the Swiss army. The reviewer states that "Bircher shows the same thoroughness in this comprehensive military study as in his medical work. Having gathered his information from all available sources, he details with surprising accuracy the daily positions and movements of each group of the two opposing armies, the greatest the world has ever seen, during those fateful days of September, 1914. He gives us a complete picture of the situation. A translation of the review may be read with interest.

To medical men Bircher makes a stronger impression as a sharp observer and critic and a physician with psychological insight, than as a narrator of strategical incidents. He analyses the morbid physical and mental conditions of the generals in command, and thus enables us to understand the complete failure of the strategy which was intended to alter the Schlieffen plan and lead the German troops on to victory.

With surprise we read that Moltke was physically and mentally ill when he went into the war in 1914 at the head of the German army. He had arteriosclerosis and cholecystitis, and in his letters written at that time he displayed hopeless indecision and a despairing frame of mind.

We read further that the leader of the Second Army, von Bülow, formerly one of the ablest instructors of the German Army, also suffered from arteriosclerosis, and that his next in command, Laneustein, had Basedow's disease in severe form, and that Lieut.-General Heutsch, entrusted with the important duty of communications between general head-quarters and army head-quarters, suffered from gall-stones, and had had a severe attack before the Battle of the Marne.

"The decision in the Battle of the Marne rested upon the Second Army. It was this army which at the beginning gave the advantage of position to the enemy and later involved the Third Army in the retreat." Bircher in conclusion describes the errors which the Second Army Headquarters made on the 6th, 7th and 8th of September, and shows that on September 9th when the order to retire was given, it might have been possible to have surmounted the crisis.

A. G. MORPHY.

THE HISTORY OF HARLEY STREET

The Royal Society of Medicine held an enjoyable social evening on Feb. 21st, when an address on Harley Street was given by Mr. Percy Flemming with an account of the process by which the medical profession took over the part of Marylebone that lies between Regent's Park and Wigmore-street. He pointed out that the present phase of London's growth—the incorporation of surrounding towns and villages, began about 180 years ago. Marylebone was one of these outlying villages, but the growth of the city has long since obliterated the Fleet, the Westbourne, and the Tyburn streams which once formed its boundaries. These rivers now flow imprisoned in pipes under the roaring traffic from Hampstead to the Thames. West Bourne, and its overhead conduit in Sloane-square Station, has recently been immortalized by *Punch;* Fleet, or Hole Bourne, is now a sewer under Ludgate-circus, and Ty Bourne runs near the house of the Royal Society of Medicine, under various passages and courts near Marylebone-lane, which was its left bank. At the time of the Domesday Book, Marylebone was unknown, and the land was part of Tyburn Manor. The Harley-street district was the scene of public health enterprise in very early days, for in 1236 the City authorities, in their search for a safe water supply, discovered the Tyburn and piped it where it was reinforced by a spring, just in the dip by Stratford-place.

The critical time for the amenities of the place came in the reign of James I., who sold Tyburn Manor, but kept what is now Regent's Park for his own use, with the result that this invaluable oasis is still in the safe hands of the Crown. A scheme was later put forward for dividing the area into building sites. This evil was fortunately averted, but the southern end was partly built over, and one side of Harley-street is Crown property, and the other side privately owned, to this day. The park was let out to farmers, and there is contemporary evidence of its use by physicians for a kind of spa treatment. In 1772 a lady of Great Portland-street, the patient of a Dr. Armstrong, was advised to take an early walk every morning and to drink milk at a farmhouse situated near Yard Gate. Her son mentions the "elegant mansions" of Cavendish-square as the border of the town and the open country. This and its neighbouring squares were laid out in 1718, and soon became the home of the aristocracy. There would almost certainly have been a sprinkling of general practitioners then, but the consultant district was in the City, round about Broad-street, New Bridge-street, and Finsbury-circus. The migration westward halted for a space in Bloomsbury, and for some time after that the favoured spot was Hanover-square. Only the later 'thirties saw the start of the Harley-street district, when a few consultants moved to Cavendish-square. The numbers slowly increased until in the 'sixties Harley-street began to be regarded as the right place for a consultant to live. Sir William Jenner was actually the first to arrive; he entered No. 8 in 1851. Mr. Flemming, in concluding, remarked on the trickle of medical men across Marylebone-road into Regent's Park, and speculated whether this foreshadowed a general migration. His lecture was illustrated with some interesting prints and maps of old Marylebone, the originals of which, with many others, were displayed in the Society's Library.—*Lancet*, Feb. 26, 1927.

Medico-Legal

THE USE OF THE TERM DOCTOR OR PHYSICIAN AS AN OCCUPATIONAL DESIGNATION

DEAR DOCTOR:

At the instance of College authorities, I am enclosing copy of judgment of the Honourable Mr. Justice Middleton, setting forth his interpretation of that portion of the Ontario Medical Act, Section 49-(1), referring to the use of the designation "Doctor" (or of cognate terms) by those, not members of the College, and, under this judgment, not entitled to use such.

It might be well to bear in mind that, as the Legislature has provided a body, known as the "Board of Regents," the better to care for the interests of those of the public who engage the services of "Drugless Healers," and under it has accorded certain privileges to the latter, related to limited practice of Medicine, it is natural to expect that the rights enjoyed by them under this legislation should be duly respected by the general profession, and as long as their activities are confined to the exercise of what the law allows them to do, a sympathetic attitude might not unreasonably be expected to be observed toward them. Should the Drugless Healers live within the law, cause for friction between them and members of the regular profession ought to automatically cease. Comment is invited.

Respectfully,

H. WILBERFORCE AIKINS,
Registrar, College of Physicians and Surgeons of Ontario.

April 30, 1927.

COPY OF JUDGMENT OF THE HON. MR. JUSTICE J. A. MIDDLETON DELIVERED APRIL 27, 1927.

The prosecutions are under the provisions of the Ontario Statute, 1925, Chapter 48, amending the Ontario Medical Act.

Under this Statute any persons not registered under its provisions, "who takes or uses any name, title, addition, or description implying or calculated to lead people to infer that he is registered under this Act or that he is recognized by law as a physician, surgeon, accoucheur or a licentiate in medicine, surgery or midwifery" or "who assumes, uses or employs the title 'Doctor', 'Surgeon' or physician or any affix or prefix indicative of such titles as an occupational designation relating to the treatment of human ailments" is liable to a penalty.

Hubert Pocock obtained a degree of Doctor of Osteopathy in 1911 at the College of Osteopathy, Kirksville, Missouri. The nature of this degree and the course of study leading up to it are not shown but from what is shown I assume that the holder of such a degree has been trained and qualified to treat human ailments by that method known as osteopathy.

That he has assumed, used and employed the title Doctor has been abundantly proved, and the prosecution urge that this title has been used as "an occupational designation relating to the treatment of human ailments"—and therefore he has been guilty of an offence against the Statute.

The Magistrate has refused to convict because the accused has not, in his opinion, used

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the word Doctor as an occupational designation, but only as a scholastic title. The occupational designation, in his opinion, is "osteopath" not "Doctor".

I cannot agree with this. A "Doctor" in common parlance is one licensed to practice medicine, a physician, one whose occupation is to cure diseases. (Century). A doctor of medicine, in popular current use is applied to any medical practitioner (Oxford), and even if another equally admissible meaning "one skilled in a learned profession" is given, what is done here is in my opinion a violation of the Act.

This gentleman, by his training in the osteopathic college, has become qualified to treat human ailments by the system of medicine or treatment taught in the college in question and this is his occupation and the designation "Doctor" conferred upon him by this college is his occupational designation. Our legislature has chosen to prohibit the use of the term Doctor by any other than those registered under the Medical Act as an occupational designation. This may, in some cases produce hardship, but once the legislative will is expressed, it must be obeyed.

The accused is a "drugless practitioner" as defined by Chapter 49 of the Acts of 1925 and may register under that Act. The Board of Regents under that Act may designate the manner in which any person so registered may describe himself so as to indicate his qualification or occupation so long as section 49 of the Medical Act, passed contemporaneously, is not contravened. I understand that this body has not yet acted. I do not think it can authorize the use of the words Doctor, Surgeon, or Physician. I cannot see that any hardship would follow if Mr. Pocock changed his signs and his cards, etc., so as to read "Hubert Pocock, Osteopath" or "Hubert Pocock, Graduate of the American School of Osteopathy."

I need not discuss the case of Mr. Ellison. It is similar save that he is a chiropractor and has a degree from another college. In each case the answer to the question, "Was I right?", should be "No. There should have been a conviction."

The following was the question submitted by the Magistrate: "Whether on the facts as found by me I was right as a matter of law in dismissing the information?"

Reports of Societies

ACADEMY OF MEDICINE IS HOST TO COUNCIL OF THE ASSOCIATION

At the dinner given by the Academy of Medicine to the Council on the first evening of the meeting, President Starr welcomed the members as follows:

After many years of trial and experiment, the Canadian Medical Association decided upon June as the best month for its meetings. It is the birth month of our Honorary Patron, H.R.H. the Prince of Wales. It is, too, the most beautiful month and is the growing time of the year, just as the Canadian Medical Association is the growing organization of the medical profession from the Atlantic to the Pacific. It has not yet come to its full growth. I wish members would remember that, when they grow restless because certain things have not been accomplished, they will come with the sweetness of the summer of our existence. Later will appear the autumn, with its more vigorous and sterner order of things, as the Association prepares to meet the winter of its existence. We need to lay in our winter supplies of good will in the profession, of complete organization of services to the profession, and to the public throughout the broad Dominion of ours.

With all these things comfortably in our storehouse, the Association, long after you and I have passed to the Great Beyond, will recline in its easy chair before a cosy fire, calling to memory its early beginnings, its heart breaks, and its joys, its discouragements long since forgotten.

What can stop its growth? Nothing. The momentum now is like unto a great army in khaki. Nothing can stop it. With the Union Jack at its head, nothing can stop it until every reputable practitioner from Halifax to Victoria is a member.

Formerly, great men have occupied the post I try to fill to-day. In the beginning was Sir Charles Tupper, the Hon. Dr. Parker of Halifax, R. P. Howard of Montreal, Hodder of Toronto, Fenwick of Montreal, Osler of Montreal, Holmes of Chatham, Graham of Toronto, Roddick of Montreal, Bayard of St. John, Cameron and McPhedran of Toronto, John Stewart of Halifax, Powell of Ottawa, and a host of others. Among the distinguished members we have had W. T. Aikins, Bovell, Reeve, Gardner, Shepherd, Temple, Grassett, and Peters. I could weary you with the list, it is so long. Surely, it is up to the profession in Canada to hold high the torch that has fallen into our hands.

May I say a word to the wise. Yours is a strenuous occupation. Learn in your youth to take recreation in order that when the autumn of

life comes, you may be able to enjoy life. "It is common knowledge that when the oxen have swunken a part of the day under the coersive yoke, they are relieved thereof, and loosed and suffered to go seek their pasture at their own sweet will in the woods."

We don't need much in this world to make us happy and contented. You may remember the fable of the king who became very ill (I love the legend). Finally, a learned consultation was held, after which he was informed that the only cure for him was to wear the shirt of some really happy man. Courtiers and doctors hunted far and wide, and after much searching they at last found a "really happy man," but unfortunately he had no shirt. He got his pleasure from nature and the outdoor life.

THE AMERICAN ASSOCIATION FOR THE STUDY OF THE FEEBLE-MINDED

The fifty-first annual session of the American Association for the Study of the Feeble-Minded was held at Cincinnati on June 4th, 5th, and 6th, thus following the meetings of the American Psychiatric Association and allied societies.

Dr. B. W. Baker, in his presidential address, pointed out that, as a result of the public being fully informed as to disorders like cancer and tuberculosis, financial and other support for study and research was forthcoming, and stressed the necessity of disseminating knowledge as to the problems of the feeble-minded so that similar interest and support might be aroused in this field. In referring to the attempts being made to tackle the problems of the feeble-minded, Dr. Baker made reference to the value of sterilization and appealed for careful study of the cases so treated. It seemed that a tendency to adopt this procedure by the various States was progressive, and in view of a recent decision of the Courts upholding the measure as constitutional, it was probable that more widespread application would take place in the near future.

In the section of Social Service as applied to mental deficiency, an interesting paper entitled: "A Study in Mental Deficiency in a Canadian Province," was read on behalf of Dr. C. M. Hincks of Toronto. This paper gave some account of a recent survey of the feeble-minded in Nova Scotia conducted by the Canadian National Committee for Mental Hygiene, and considered some of the questions arising from this study such as: the solution of the problem of mental deficiency in rural communities; the effect of extensive emigration on the mental deficiency rate; and the value of various measures of dealing with the feeble-minded.

This paper aroused an interesting discussion which was carried on in conjunction with one read later by Dr. Butler of Eldridge, California, on behalf of Dr. Paul Popenoe entitled, "Success on Parole after Sterilization." There would seem to be little doubt in most circles in California as to the successful results achieved by sterilization of the feeble-minded. It was stated that 75 per cent of the sterilizations (under legal process) performed in the United States have been done in California, and that over 5,000 cases have been sterilized there (this figure includes both insane and feeble-minded); not a single appeal has yet been made. Dr. Butler discussed the results in cases placed on parole, and especially those cases who, but for sterilization, would have been maintained under continuous institutional care. As a result of this latter group being paroled a saving of $220,000 had been effected in one institution over a period of two years.

In the section of Criminology as related to mental deficiency, Dr. Winfred Overholser of Boston gave an account of pioneer work being done in Massachusetts in a paper entitled, "Psychiatric Studies of Jail Prisoners in Massacusetts." Since 1924 almost 4,000 prisoners in the county jails have been submitted to a comprehensive examination which includes not only the psychiatric and psychometric, but also the sociological and anthropometric aspects. Dr. Overholser emphasized the inadequacy of purely psychometric studies of prisoners and made an appeal for a complete and balanced examination of all prisoners, since no State could adequately carry out the penal code unless the individual needs of the offenders were considered.

DAVID SLIGHT.

CONFERENCE OF CANADIAN UNIVERSITIES

Abstract of Papers Presented

At the Conference of the Canadian Universities, held at the University of Western Ontario on May 31, 1927, Dr. E. Stanley Ryerson of the University of Toronto, presented to the Committee on Medical Education a paper entitled, "Discrepancies in the Curricula of Canadian Medical Schools." He stressed the need in most medical schools of less teaching and more student work. Dean W. H. Hattie of Dalhousie University in his paper on the "Requirements for Medical Licensure" suggested that arrangements should be made so that one examination would not only qualify the medical student for his degree but also to practise medicine. The Medical Council of Canada could well take the initiative in this matter.

Dean Rankin of the University of Alberta pointed out in a paper on the Interchange of Teachers some of the difficulties and disadvantages of such a plan.

Dean Harwood of the University of Montreal discussed the value of the interchange of information relative to changes in the curriculum and teaching methods.

Dean Primrose introduced the following resolution which was adopted by the Conference, "Resolved that the Committee on Medical

Education approves of the principle of a single final examination for a university degree and licensure of medical students and recommends that steps be taken to attain this object by agreement between the Universities, the Licensing Boards of the various provinces and the Medical Council of Canada, also that this resolution be forwarded to the Universities having medical schools, the various provincial Licensing Boards and the Medical Council of Canada."

The Conference will meet in Montreal in May, 1928.

Correspondence

London Letter

(From our correspondent)

London University.—If a stranger arrives in London and asks a taxi-driver to take him to "The University" he may get considerably surprised but it is unlikely that he will arrive where he wants to go. This is because London does not possess an adequate central university building. However, the announcement made by the President of the Board of Education at the Presentation Day dinner last month indicates that at last all the internal dissensions are ended and the site of eleven and a half acres in Bloomsbury, just behind the British Museum, has been purchased, thanks to a limited grant by the Chancellor of the Exchequer and to a munificent contribution from the Rockefeller Foundation. It is hoped that there will be presently erected a central office, senate house, a library, ceremonial hall, examination halls, students' clubs, etc. From the point of view of the medical faculty the site is excellently placed being very close to the British Medical Association House, not far from the Royal Society of Medicine, with the Middlesex, University College, Charing Cross and Royal Free Hospitals all reasonably close. The Hospital for Tropical Diseases is near by and the new Imperial College of Tropical Hygiene is being built on an adjoining site. In Queen's Square, in the near neighbourhood, is the Hospital for Nervous Diseases, and the Examination Hall of the Conjoint Board. The Hospital for Sick Children in Great Ormond Street is within five minutes walk, while the Royal College of Physicians and the Royal College of Surgeons are both within easy reach. If residential quarters can be erected in the neighbourhood it should be possible to organize unrivalled post-graduate facilities with Bloomsbury as a centre. London sadly lacks residential clubs for even its undergraduates, but St. Thomas's Hospital has made a move in the right direction, and recently the Archbishop of Canterbury opened a splendid building for this purpose and it is hoped that other hospitals, especially those engaged in rebuilding or extending their premises, will follow this excellent example. The future for London University is now a more settled affair than it has been for years and the medical faculty, no less than the other faculties, is glad that the day of doubts and dissensions is passed.

The Drink Problem.—Prohibition is a very, very long way off in this country but nevertheless some alteration in the present state of affairs seems to be showing on the horizon and the medical profession cannot but be interested. A recent book on the English Public House, characterized throughout by studious impartiality, came to the conclusion that with regard to the trade in liquor, the safeguards set up by the community in the way of laws and regulations do not balance the pushing power of private profit-making. It is admitted that there are many well-managed public houses, but there are still too many drink-shops where patients for the hospitals are steadily recruited. The long-delayed report of Lord Southborough's Committee on the Disinterested Management of Public Houses has recently been published, and it is of interest in this connection. The well known "Carlisle scheme," first adopted during the war as an emergency measure, but now permanently established in that city not only by virtue of its social benefits, but also because of its economic probity, is a working example of the disinterested management system. In the State-managed public house the selling of drink becomes only part of the business, the manager getting commission on everything sold but drink, and the serving of food and the provision of accomodation for wife and family receiving full consideration. Lord Southborough's committee did not think that the results already obtained at Carlisle could be made of more general application by legislative means, but in moving the second reading of the Liquor (Popular Control) Bill, generally known as the "Oxford Bill," in the House of Lords the other day, the Bishop of Liverpool suggested that the measure will give the people a chance to adopt the Carlisle scheme if they wish. The bill enacts that throughout the country voting will take place in each area on three options: no change, reorganization or no license. The second of these options would necessitate the adoption of some scheme of disinterested management in most instances. These facts are set out here to show that the drink problem is still attracting attention in this country, although one looks in vain for a fair

exposition of the situation in the daily press, so well organized is the propaganda for the other side.

Daylight Saving Founder.—On a pleasant Sunday in May the Lord-Lieutenant of the County of Kent performed the opening ceremony for the memorial to William Willett. By public subscription there has been purchased for the nation, Pett's Wood, a beautiful open space of about 85 acres lying some 14 miles south-east of London; it is a particularly appropriate commemoration of the work of the founder of "summer-time" since it was in this wood that he used to love to ride early every morning. Daylight saving is now so well established that the die-hards are becoming silent. It is amazing how much opposition there was to the scheme on the grounds of health, when the common-sense point of view seems to be that the more we use our hours of darkness for sleeping and our hours of sunshine for being awake, the better for our physical well-being. Yet we are told, not so many years ago, that by keeping children out late at night we were sure to lower the vitality of coming generations and there were even some who solemnly wrote to the *Times* to point out that by interfering with the laws of nature we should only bring down plague and pestilence upon the land. It is difficult to estimate the benefit to health of William Willett's simple plan but no one who is actively concerned with the physical fitness of the nation has any doubt as to its efficacy.

London, June, 1927. ALAN MONCRIEFF

Abstracts from Current Literature

MEDICINE

Results of Artificial Pneumothorax in Pulmonary Tuberculosis. Rist, Edouard, *Am. Rev. of Tuberc.*, 1927, xv, 3.

Dr. Rist holds that artificial pneumothorax is the most remarkable advance made thus far in the treatment of pulmonary tuberculosis. It is difficult, however, to assess its value statistically. It is well recognized that remarkable recoveries have resulted from its employment; but partial or temporary successes, and even total failures are also reported, and Dr. Rist emphasizes the danger of putting in the foreground extraordinary results. "*Extraordinary,*" he says, "is plainly synonymous with *exceptional.*"

Further, the cases used in the statistics should, as far as possible, be of the same kind and order, and it is obvious that the classification of chronic tuberculosis is a difficult problem. The most obvious question to be asked is, what are the control cases with which comparison is made? They cannot be those who were judged to be unfit for the treatment. Rather should they be those who were judged to be suitable for treatment, but who did not receive it. Such a group is made up of those who refuse treatment, for one reason or another. Dr. Rist has made a practice of following up this type of patient as carefully as those whom he has treated, and they afford valuable material for comparison.

The present survey includes all the cases treated by artificial pneumothorax in the Laennec Hospital in Paris, from November, 1912, to January, 1926. Due weight is to be given to the fact that this includes all the early cases which were treated before experience had ripened. The total number of patients in whom artificial collapse therapy was used in this time was 1,009, but a large number of these presented special features which removes them from the category of cases of chronic, unilateral tuberculosis of the lung; the total number actually considered is 759. All of these had bacilli in the sputum. All had at least one-half of a lobe involved, often much more. Nearly all had one or several cavities.

In comparison with these are 213 patients who refused this form of treatment, of whom it was possible to follow 74. The following tables show some of the results:

Percentage of Results in 759 Cases

Healed	51	6.5	per cent
Clinically well, symptom-free, working, but still under treatment	336	45.5	"
Condition unchanged	33	4.0	"
Bilateral (alive)	99	13.5	"
Deceased	240	30.5	"

Condition of Controls (Refusals)

Condition unchanged	13	18.0	per cent
Worse	22	29.0	"
Deceased	39	53.0	"

The original paper should be consulted for fuller details. One need only speak here of the enthusiasm evinced by Dr. Rist. He believes that better results can be obtained, especially if the treatment is begun earlier. He acknowledges that the successes are limited, naturally, but "beyond any discussion, they are proved."

H. E. MACDERMOT

On the Combination of Angina Pectoris and Severe Anæmia. Herrick, J. B., *Am. Heart J.*, April, 1927, ii, 351.

Although angina pectoris occurs rarely in cases of severe anæmia, there are some patients in whom the anæmia seems to be the main

etiological factor in causing cardiac pain. In 1918 Herrick and Nuzum drew attention to the association of angina pectories and severe anæmia, describing four illustrative cases. Since then Herrick has seen three additional cases; one in an adult male with pernicious anæmia and angina of effort; a second in a man of seventy who had cardiac failure with substernal pain on exertion for a year before pernicious anæmia was recognized; the third was a man of 63 with carcinoma of the right kidney, severe secondary anæmia and pain in chest on walking. Post mortem examination of this third case revealed arteriosclerotic obliteration of the main stem of the left coronary artery. Herrick expresses the view that the ischæmia due to anæmia *per se* or in association with arteriosclerosis of the coronary arteries causes the angina pectoris. HAROLD N. SEGALL

The Disturbances of the Cardiac Mechanism in Subacute bacterial Endocarditis and Rheumatic Fever. Rothchild, M. A., Sacks, B., and Libman, E., *Am. Heart J.*, April, 1927, ii, 356.

Extensive clinical and electrocardiographic observations, on 123 cases of subacute bacterial endocarditis and in 65 cases of acute rheumatic fever, are analyzed. In the former, abnormalities of the cardiac mechanism are relatively rare. A very significant point which these studies have brought out is that auricular fibrillation was encountered but once amongst 109 cases of subacute bacterial endocarditis in the active stages of the disease; three other cases of auricular fibrillation and one of auricular flutter occurred in the series of 123 cases but during the bacteria-free stage. On the other hand, the clinical records of 200 cases of auricular fibrillation were examined in search for the incidence of subacute bacterial endocarditis, and not a single case was found. It appears therefore that once auricular fibrillation is established the development of subacute bacterial endocarditis is very unlikely. The existence of auricular fibrillation must usually be considered as a point against the diagnosis of subacute bacterial endocarditis in the active stages of the disease; but it is quite compatible with the bacteria-free stage. Prolongation of the P-R interval and changes in the R-T or S-T segment were noted a number of times in subacute bacterial endocarditis, but not at all as frequently as in rheumatic fever.

Of the 65 cases of rheumatic fever investigated 61 showed some abnormality of rhythm or conduction in the electrocardiogram. The changes indicating myocardial damage were found to vary within wide limits over relatively short periods of time and in most instances, eventually disappeared entirely. It appears that the myocardium is implicated in nearly every case of rheumatic fever; there is as yet no conclusive evidence as to whether the damage is transient or permanent in those cases in which temporary electrocardiographic changes are found. In clinically atypical cases of rheumatic fever, the proper correlation of electrocardiographic findings is of diagnostics importance.

HAROLD N. SEGALL

Studies of Exophthalmic Goitre and the Involuntary Nervous System. Kessel, L., and Hyman, H. T., *J. Am. M. Ass.*, May 7, 1927.

In the first place while exophthalmic goitre is very rarely missed in diagnosis, it is very often diagnosed when not present. It is not a common disease. There are two misconceptions. One is that all with thyroid enlargement are under suspicion of having "hyperthyroidism" in some form; the other that where there are certain symptoms and an enlargement of the thyroid, the symptoms are caused by the enlargement. These are not supported by scientific evidence. Simple goitre rarely becomes exophthalmic goitre. Owing to a great deal of "broadcasting" regarding goitre and its dangers, nervous and anxious patients easily develop a "goiterophobia" and one finds a clinical picture very closely resembling exophthalmic goitre. Here the basal metabolic rate should decide the question, since nothing but hyperthyroidism will give a definite increase of say 20-30 per cent. Again, disturbances in the "autonomic" nervous system may cause many symptoms: cardiac, nervous, even mental, which closely simulate exophthalmic goitre. Here again the situation can be cleared up by the metabolic rate. For this reason the authors censure a great deal of promiscuous thyroid surgery that is being done at present.

Lastly, "toxic adenomata" have apparently become very frequent in recent years. Unless there is a distinct elevation of the metabolic rate an adenoma can be handled efficiently with reassurance and iodides. P. M. MACDONNELL

Impressions of the Pathology of Epilepsy from Operations. Dandy, W. E., *Am. J. Psychiatry*, January, 1927.

Dr. Dandy is convinced from his observations during operations and from ventriculograms, that epilepsy is a symptom of organic disease of the central nervous system. The absence of a striking pathological picture at autopsy is due to the fact that the lesions have long since passed the acute stage, and healing has been so perfect that little remains to be seen.

Dr. Dandy feels that there are two types of epilepsy, the congenital and the acquired. The acquired type shows two groups of lesions, namely, those which are space-occupying such as tumours and abscesses, and those which are the result of brain atrophy, the latter including

defects following emboli and thrombi, or the results of traumatism.

The chief function of the cerebro-spinal fluid is to equalize the volume within the cranial cavity. Large abscesses and tumours obtain room by squeezing out the fluid from the sub-arachnoid space over the hemispheres, and by reducing the size of the ventricles. In destructive lesions or in atrophy of the brain, on the other hand, the cerebro-spinal fluid fills up the space formerly occupied by brain tissue. In this way the sub-arachnoid spaces contiguous to the affected area dilate, and become pools of fluid and the ventricle lying underneath becomes enlarged.

At operation these changes in the sub-arachnoid spaces are evident to the naked eye; at autopsy very poorly or not at all, since the fluid is lost and the arachnoid has collapsed on the brain. By means of ventriculography changes in the ventricles can be made out much better than at autopsy.

The brain alterations in acquired epilepsy are not limited to pools of fluid. The cortex may show reduction in the size of the convolutions, and softening of the brain tissue underneath. The destructive processes which cause the softening are probably not limited to the cortex but affect the white matter which is much less resistant to trauma and easier of absorption than is the gray matter. The changes in the sub-arachnoid space are an effect, not a cause, and the cause of the acquired type of epilepsy is the primary cerebral lesion.

In epilepsy due to congenital malformations of the brain there has been no destruction of the brain and consequently no compensatory changes in the amount or disposition of the spinal fluid. A. G. MORPHY

SURGERY

Pathogenesis of Jaundice. Heyd, C. G., Killian, J. A., and Klemperer, P., *Surg., Gynæc. & Obst.*, April, 1927.

In 1847, Virchow described the etiology of jaundice as arising: (1) from conditions within the liver; (2) from pathological conditions outside the liver. Later it was decided that jaundice was always of hepatogenous origin. Recent experiments have invalidated this purely hepatogenous origin, so that Virchow was quite correct in his findings, and two types of jaundice may be said to exist, one hepatic and the other extrahepatic.

Jaundice is the result of an accumulation of bilirubin in the blood stream. There is a normal bilirubin content. This is termed physiological bilirubin and represents 1 part of bilirubin to from 400,000 to 600,000 parts of blood serum. Before macroscopic tinging of the tissues is apparent the content of bilirubin may be raised to 1 in 40,000 of blood serum. This is termed latent jaundice. This condition is analogous to that which is present in diabetes with blood sugar and in nephritis with blood urea.

The pathogenesis of jaundice embraces: (1) the metabolism of hæmoglobin; (2) the chemistry of bilirubin; (3) the site of the formation of bilirubin; (4) its physiological purpose in the organism; (5) the normal and pathological basis for its elimination, retention and accumulation; (6) the various viscera concerned in its disposal or elimination; (7) the effects of bilirubinæmia; and finally its chemical detection and identification. Theoretically, jaundice occurs: (1) as the result of intra-hepatic or extra-hepatic obstruction of the biliary passages; (2) as the result of degeneration of the hepatic cells; (3) the result of excessive production of bilirubin by the reticulo-endothelium system. Bilirubin may be formed by the reticulo-endothelium system without any part being taken by the liver parenchyma. Bile salts, however, are the specific product of the liver parenchyma. The finding of bile pigments and bile salts in the tissues evidently would point to an accumulation of bilirubin, the result of the absorption of bile that had already passed through the polygonal liver cells; a condition due to obstruction. In a type of jaundice in which bilirubin is present in the tissues and bile salts absent, we would have a dissociated jaundice and an accumulation of pigment, or bilirubinæmia, the result of activity of the reticulo-endothelium system. Therefore, it is necessary to distinguish the different types of jaundice; that is, jaundice due to bilirubin plus bile salts, and the jaundice due to bilirubin alone.

Van den Bergh made the observation that types of jaundice existed, in which it was necessary to bring the bilirubin into an alcoholic solution before colour reaction could be obtained. The former he termed a direct reaction and the latter an indirect reaction. Bile from the gall bladder always gave a direct reaction because it has passed through the liver cells. Bilirubin obtained from serous fluids in hæmorrhagic effusions in the chest or abdomen always give the delayed reaction and denotes its origin independently from liver cells.

Bilirubin in the blood in icterus has only two sources: (1) from a reduction and accumulation of bile pigment which gives a delayed reaction, and (2) from the reabsorption from the bile passages after an obstruction which gives a direct reaction.

The reticulo-endothelium system, particularly Kupffer's cells and the reticular cells of the spleen, is the system concerned in the breaking down of hæmoglobin into bilirubin. It would seem from experiments that there are two types of bilirubin. There is a normal bilirubin con-

tent at all times circulating in the body. A portion of this, which is called bilirubin A.1., is taken out by the activity of the liver cells and eliminated in the bile. This gives the direct positive reaction of Van den Bergh. The remaining portion of bilirubin is evidently a useful product, and so is not taken from the blood stream. This type of bilirubin, or bilirubin A, gives the indirect reaction or delayed reaction. So excessive may this amount of bilirubin be in hæmolytic jaundice that direct injury to the liver cells may occur by reason of the overcharge. The removal of the spleen would evidently eliminate this pathological hæmolysis and the liver would then be able to excrete this normal amount of bilirubin; that is to say, the liver has a normal threshold for elimination.

McNee classifies jaundice in the three main types: (1) obstructive hepatic jaundice; (2) toxic and infectious jaundice; and (3) hæmolytic non-hepatic jaundice.

The French school, with which are associated the names of Brulé, Gilbert and Widel, is responsible for the introduction of the conception of dissociated jaundice, the result of a toxæmia producing jaundice arising from a degenerating type of liver parenchyma. This type of icterus occurs in poisoning, sepsis, acute yellow atrophy, pneumonia, rheumatic fever, spirochætal icterus and catarrhal jaundice.

In the consideration of jaundice it is interesting to study the enterohepatic circulation of bile pigments. In the intestinal tract bilirubin is converted into hydrobilirubin, the intestinal bacteria changing hydrobilirubin into stercobilin and urobilin. The urobilin is re-absorbed by the portal system and delivered to the liver cells. Some of this urobilin is excreted with the urine as bile. Normally no urobilin can be determined in the urine but when urobilin reaches [illegible] in 100 c.c., it may be detected in the urine. In the presence of complete obstructive jaundice there can be no re-absorption of urobilin or there is no bile in the stools. Hence urobilin will not appear in the urine. R. V. B. SHIER

Latent Post-Operative Tetany. Richter, H. M., and Zimmerman, L. M., *Surg. Gynæc. & Obst.*, May, 1927.

Post-operative tetany is usually thought to be infrequent following thyroidectomy. In an examination of 174 thyroidectomies performed prior to 1924, the authors found an incidence of 1.15 per cent, which compares favourably with statistical reviews given by others.

For the purpose of the present study 100 consecutive cases of goitre have been carefully examined. This examination included Chvostek's and Trousseau's signs and blood calcium determinations. The electrical excitability was measured according to Erb. It was found, as a general rule, that, where Chvostek's and Trousseau's signs were present, the electrical irritability was correspondingly increased. In some of the cases definitely positive for Chvostek's and Trousseau's signs, a fall in blood calcium could be demonstrated, but on the whole, there were no striking differences in the calcium levels in tetanic and non-tetanic cases, indicating that the parathyroid damage was not sufficient to disturb the calcium metabolism and would further indicate that calcium deficiency is an associative phenomenon rather than the actual cause of tetany.

In many latent cases the tetany was transitory, but the condition is of prime importance, and since it is impossible at the outset to predict the subsequent course it is very important that these latent cases be recognized.

Jatron studied 71 goitre subjects before and after operation. Of the 71 cases, 14 showed positive signs of latent tetany before operation and 23 showed positive reactions after operation. The authors of this paper have not been able to show such a high percentage of positives prior to thyroidectomy.

The symptoms of latent tetany are parathesia, numbness, tingling in the extremities, "hands and feet going to sleep", and stiffness in the muscles of the face. Compression applied to arms or legs results in spasms to the hand or foot (Trousseau's sign). Fatigue, languor, and general mental depression are symptoms due to this condition. The duration of the condition is variable, often transitory, but may remain for several weeks or months.

Prophylactic treatment of tetany is directed towards preventing post-operative injury to the parathyroids. De Quervain feels that ligation of the inferior thyroid arteries close to the capsule of the gland, in the region of the arterial branches to the parathyroids, further jeopardizes the glandules. It is doubtful if the method advocated by Halsted and Charles Mayo of delivering the gland controlling the hæmorrhage and protecting the parathyroid bodies and recurrent laryngeal nerves (sub-capsular operation), published 20 years ago, has been improved upon.

The treatment of parathyroid insufficiency, or latent tetany, consists in placing the patient on a high caloric, meat free diet, giving 1,000 c.c. of milk and from 200 to 300 grm. of lactose daily, which changes the colon flora to an aciduric type in 3 or 4 days. Lactose is best given in ices, candy, ice cream, or in wafers. If it produces colic or diarrhœa, chalk, kaolin, or bismuth are added. If the lactose is objectionable, bacillus acidophilus in a milk culture is substituted. Carbohydrates other than lactose are given freely. Fluids are pushed, pitchers of water and fruit juices being kept constantly at the bedside. Calcium lactate is given in 30

to 60 gramme doses daily. In cases uncontrolled by the above measures Collip's active principle of the parathyroid (parathormone, Lilly) gives very gratifying results.

R. V. B. SHIER

Non-Operative Treatment of Intussusception. Retan, G. M., *Am. J. Dis. Child.*, May, 1927.

The author reports a case of intussusception in a boy 9 months old, which was successfully treated by barium enemata. He points out that the greatest danger in this method is partial disinvagination, but this can be recognized by the fluoroscope.

Not desirous of drawing conclusions from one successful case he offers the article with the idea of presenting a new technique.

LILLIAN A. CHASE

PÆDIATRICS

A Reversal of the Normal Concentration of the Urine in Children Having Enuresis. Friedell, A., *Am. J. Dis. Child.*, May, 1927.

Observations were made on thirty-nine patients. Each child was carefully examined with a view to excluding those presenting symptoms referable to the genito-urinary system. The entire group was treated by restricting the fluid intake after 4 p.m., abstaining from tea, coffee, and highly seasoned food and retiring to bed at 7.30 p.m. on a hard mattress. In addition each child was given a hypodermic injection of sterile water once a week and was assured that this treatment would result in a cure. Twenty-nine of the children were relieved of their condition without a relapse over a period of six months.

In those cases having urine whose specific gravity during the day was equal to or slightly greater than the concentration occurring at night, treatment presented greater difficulty than in children showing a normal urinary concentration. A complete failure to accomplish a cure occurred in three instances: in each of these the family co-operation was excellent. A careful study of the concentration of the urine in each of these three children revealed a persistent and definitely higher specific gravity during the day than during the night: a situation considered just the reverse of normal.

LILLIAN A. CHASE

Anorexia in Childhood. Shapiro, Frank, *Arch. Pædiat.*, March, 1927.

Acute anorexia is usually due to some acute infection and ceases with the underlying condition. Chronic anorexia is due to a number of causes, which must be sought out and corrected. The condition is often associated with anæmia, constipation, malnutrition and nervous fatigue. The following are some of the more common causes:—

1. Too frequent feeding; too much milk—especially between meals—and the abuse of sweets.
2. Insufficient fresh air and sunshine.
3. Hypertrophied or infected tonsils, and adenoids, sinusitis, carious teeth, etc.

Anorexia nervosa may occur even in infancy, and may be stubborn enough to cause emaciation and even endanger life. It is a neurosis and does not yield readily to treatment.

The treatment of anorexia requires a careful examination to discover the possible cause; a careful regulation of diet, bowels and daily routine. Long intervals between meals, and nothing but water between meals. Milk must be reduced in amount and sweets eliminated. The meals should be varied and made as attractive as possible. Gavage may be necessary. The Alpine lamp is often beneficial. Tonics of iron, nux vomica or hydrochloric acid may assist other measures.

L. M. LINDSAY

ANÆSTHESIA

Use of Insulin in Surgical Operations. *Proc. Roy. Soc. Med.*, 1927, xx, 509.

After operations during which much anæsthetic has been used the mechanism by means of which sugar is taken from the blood is interfered with, and ketosis may be set up. Glycosuria may occur as a result of the liberation of the stored sugar of the body. The patient has less power to deal with carbohydrates.

The cells of the body, and especially the liver cells, are less resistant and more liable to toxæmias when depleted of their glycogen. The effects of anæsthetics are much more serious in animals whose liver cells have been cleaned out of glycogen, and in human beings suffering from such conditions as the vomiting of pregnancy. A patient should therefore go to operation with his liver cells containing as much glycogen as possible.

From the practical point of view all that one has to do in estimating the risk of operation on a patient is to examine the urine for sugar and ketone bodies. It is not wise to get rid of the sugar and ketosis by reducing the diet since this tends to remove glycogen from the cells. The patient should be treated with insulin; and this must be given freely as long as the urine contains sugar. If with the reduction of sugar, ketones are abundant, more insulin must be given, but with an additional amount of sugar in the diet, so as to prevent insulin-poisoning reactions.

When a diabetic patient has to be operated on without time for proper preparation it is very difficult to reduce ketosis to the necessary degree. Sometimes even large doses of insulin have no effect. Starvation is harmful.

XUM

Before and after operation the patient with ketosis requires a good deal of fluid. After operation upon a patient with diabetes, there is usually acidosis and there may be a tendency to pass into coma. If there is a fair amount of sugar in the urine large amounts of insulin may be given to counteract the tendency to acidosis. A sufficient amount of sugar must be given to make it safe to give these large doses of insulin.

The non-diabetic patient may show a considerable ketosis after operation. He may have glycosuria. The ketosis is best treated with sugar. Insulin has little effect. The administration of sodium bicarbonate is useless.

W. B. HOWELL

Anæsthesia from the Standpoint of the Surgeon. Müller, G. P., *Am. J. M. Sc.*, 1927, clxxiii, 605.

This paper is a brief discussion of the writer's "reactions to anæsthesia as judged from the experience of the last four years." He rarely uses ether because the patient dreads it, and because of the extra work imposed upon the ward nurses by the frequent vomiting, the need of physical restraint in many cases, and the necessity of detailing special nurses to watch the patient. On the other hand he likes ether as an anæsthetic because of the greater relaxation, the ease of exposure, and the "ability to speed up."

From September, 1925, to September, 1926, pulmonary sequelæ occurred in twelve patients. In two of these, ether had been used; in one, nitrous oxide, and ether; in two, nitrous oxide; in one ethylene; in two local anæsthesia; in two local anæsthesia and gas; and in two, ethylene and local anæsthesia. Multiple lung abscesses followed an operation done under endo-tracheal anæsthesia. Forty-eight per cent of the operations in Dr. Müller's services are done under gas and oxygen or methylene anæsthesia. In about 30 per cent of these ether has to be added.

W. B. HOWELL

Treatment of Acute Infectious and Contagious Diseases.—J. H. Musser, New Orleans, reviews the histories of the patients who were admitted to the contagious disease ward of the New Orleans Charity Hospital for the last eleven months, paying special attention to scarlet fever, erysipelas, meningitis and measles. There were fifty-six cases of faucial and tonsillar diphtheria. The routine treatment of these patients is the administration of 20,000 units of antitoxin. In small children under 3 years of age requiring large doses, this is administered in divided doses. Ten thousand units are given intramuscularly and 10,000 intraperitoneally. Ten cases of diphtheria of the nose, ear or conjunctiva were also treated by antitoxin. In the local treatment of these cases, gentian violet is employed. Irrigation of the nose and ears proved beneficial in getting rid of the organisms. Forty seven cases of laryngeal diphtheria were encountered. The children suffering from this severe type of diphtheria were given an initial dose of antitoxin of from 20,000 to 30,000 units, and if there was not a very prompt improvement in their symptoms, the dose was repeated in eight hours. Forty-one children with whooping cough were under observation, and of these forty-one, ten died from the complicating broncho-pneumonia, the deaths occurring in small babies under 2 years of age who were brought into the hospital frequently in the last stages of this disease. Musser believes that ether, 10 c.c. in oil, injected into the rectum every eight hours, is usually efficacious in controlling the severe paroxysmal cough. Neither vaccines nor any form of so-called specific therapy have been used. There have been treated twenty-eight cases of scarlet fever with the serum as prepared by a method, modified somewhat from that of Dochez and now obtainable on the open market. The dose of the serum given was 10 c.c. and it is given intramuscularly. The rash disappeared in the majority within twenty-four hours after the injection of this serum. The throat symptoms disappeared rapidly, and the fever fell by crisis or rapid lysis shortly after the injection of the serum. In only one of the cases was there a severe serum reaction. Of the twenty-nine patients who were admitted with a diagnosis of meningitis, twenty-eight died. Eighteen of these were caused by pneumococci, five by the tubercle bacillus, one by an indefinite streptococcus, two by influenza bacilli, two by meningococci, and one by some undetermined organism. The treatment of measles with convalescent serum is endorsed. The procedure has been to bleed the patient just before discharge from the hospital, allow the blood to clot, decant the serum, and add 0.5 per cent tricresol. The serum is kept until the next case of measles occurs. There have been thirty-one cases of erysipelas with two deaths. Rivers and Tillett suggested that in erysipelas the spread of infection might be prevented by injections into the margins of the healthy skin of immune serum. In fourteen cases of erysipelas, such injections were made. It does not seem to have very much immediate effect on the general toxic symptoms and, in addition, has the disadvantage that it is time-consuming to inject a large area in such a way that the entire bordering skin is infiltrated completely.—*J. Am. M. Ass.*, April 9, 1927.

Obituaries

Dr. Jno. P. Armour, of St. Catharines, Ontario, died on June 22nd after an illness of but a few days. Dr. Armour who graduated from the University of Toronto in 1877, located for a few years in Lakefield, later moving to St. Catharines where he practised for the past 40 years.

Dr. Edward Winslow Dunlop, of Port Dufferin, N.S., died on May 19th, after a somewhat prolonged illness. Dr. Dunlop located at Port Dufferin immediately after graduating and for more than 36 years ministered to the medical needs of that community with much acceptance. His death is a very distinct loss to the profession of Nova Scotia, and has caused sincere regret throughout the district in which he practised, where he was held in high esteem and affectionate regard.

Dr. W. E. Harding, a graduate of the University of Toronto in 1888, died in Brockville on May 13th, where he had practised for 39 years. In addition to being one of the best known physicians of Brockville and the district, Dr. Harding occupied the position of coroner at Brockville.

Dr. Charles Kerr, aged 49, passed away at the General Hospital, Vancouver. For many years he had practised at Maple Creek, Saskatchewan, but during the great war served overseas for four years in the Canadian Army Medical Corps.

Dr. C. D. McCulloch, of Wellington, died in Belleville on June 5th, from a virulent type of meningitis and after an illness of only four days. Dr. McCulloch was well known in this district and for many years had been coroner of Wellington. He was particularly well known in all athletic circles and had been interested for years in the promoting of clean, active sports.

Dr. E. N. Perrigard, of Montreal, was suddenly taken ill on the steamer that was bringing him home to Montreal from post-graduate studies in Europe, and died at the Royal Victoria Hospital shortly after his arrival.

Dr. Gerald Wallace Grant. The Halifax profession were greatly saddened on learning of the death of Dr. Gerald Grant, which occurred on May 20th. Dr. Grant, who was a son of a former Lieutenant-Governor of Nova Scotia and a grandson of the late Honorable Dr. D. McN. Parker (the second president of the Canadian Medical Association), graduated in medicine at the University of Edinburgh in 1916, and immediately entered the Royal Army Medical Corps, in which he served until the end of the war. He then returned to Halifax, and began practice. He was appointed to the medical staff of the Camp Hill Hospital where he devoted his work more particularly to neurology. He also became associated with Dalhousie University as demonstrator in the departments of anatomy and pathology; later he received an appointment as clinician in medicine at the Dalhousie Clinic. In everything he undertook he strove to excel, and all his work was characterized by diligent and painstaking thoroughness. His engaging manner, bright disposition and never failing kindliness made him a general favourite, and the early termination of a life which was unusually full of promise has caused very general regret. Much sympathy is being expressed for Mrs. Grant, who was visiting at her home in England at the time of the doctor's death; also for his father and mother, both greatly beloved by the people of Nova Scotia, and for all other sorrowing relatives.

News Items

GREAT BRITAIN

We learn that as a sequel to Sir Berkley Moynihan's address on Lord Lister, which was broadcast in England on April 8th, Sir Charles Hyde has endowed a bed in five of the Birmingham hospitals.

A residential club for St. Thomas's Hospital students has recently been erected on Lambeth Palace Road, almost opposite to the entrance of the Medical School. The building has a very dignified appearance, is six stories in height and will accommodate 50 students and 10 hospital officers as residents. On the ground floor is an oak-panelled dining room, and on the first floor is the club room. In the latter a very handsome overmantel has been erected as a war memorial to St. Thomas's students who fell at the front. The upper floors contain the bedrooms which are arranged so as to form comfortable sittingrooms during the daytime. The washing and bathroom accommodation occupies a central apartment on each floor. The furniture of the building is entirely finished in oak to match the woodwork. The building was opened recently by the Archbishop of Canterbury, and was rendered possible by the generosity of Lord Riddall who lent a large sum of money at a particularly low rate of interest.

Following the example of many other well-known institutions, the ancient and historic hospital for the care of the insane—Bethlem ("Bedlam") is to be removed from London to a more suitable and commodious site on the Monks Orchard estate of 340 acres at Shirley, near Croyden. The original hospital was a priory founded in 1247 by Simon Fitzmary, a sheriff of London. Proving inadequate, a second building was erected in 1675 on part of what is now Finsbury Circus. The present building was constructed in 1815 in St. George's Fields, Southwark, and for many years has been unsuited to modern methods of caring for the mentally afflicted. In the new site fresh air, spacious grounds, and means of recreation, will be amply provided for. A.G.N.

XUM

SOUTH AFRICA

Dr. Bodkin of Bloomfield reports* an interesting case of prolonged retention in the larynx of a dental plate containing 5 teeth, which had been knocked into the throat in a motor accident. The patient did not report the loss of the plate, and spent three months in a "sanatorium" where, presumably on account of much hæmorrhage by the mouth, he was treated for both gastric ulcer and tuberculosis. X-Rays were taken which were supposed to confirm the latter diagnosis, but as Dr. Bodkin says, "the x-rays never wandered up as far as the larynx". Several physicians had seen him during the following months but the author of the report (the 13th doctor to be consulted) was apparently the first to make an ordinary indirect examination of the larynx, when the plate was at once seen standing up behind the epiglottis. It was easily extracted with a forceps and the patient was able next day to eat a beefsteak, though whether with the same dental plate is not recorded!

* *Journ. of Med. Ass. of So. Africa*, 1927, i, 8

AUSTRALASIA

The Workmen's Compensation Act for New South Wales has now been in force for about twelve months. One new feature of the Act is a compulsory insurance by the employer against his liability in respect of an injured worker, thus protecting the injured against danger of financial failure by his employer. An employer may be authorized as a "self-insurer" by the Workmen's Compensation Commission. Under this Act compensation is greater than under former conditions. Dependents of the incapacitated also receive compensation.

This Act establishes the principle that the worker has a legal right to treatment, that the cost of such treatment is payable by the employer, and that a public hospital may recover from the employer the cost of any hospital treatment provided for the worker. The question therefore has been asked if any payment, and how much, should be made to the visiting medical staff for treatment of such cases. Apparently no arrangement has been made in this connection, but it is recognized that the cost of the medical benefits, however distributed, will be a charge on industry.

NOVA SCOTIA

Toward the end of May, graduating exercises were held at the training schools of the Aberdeen Hospital, New Glasgow and the St. Martha's Hospital, Antigonish. At New Glasgow Dr. John Bell addressed the graduates, while Dr. J. J. Cameron did similar service at Antigonish.

Dr. George E. Buckley, of Guysboro, a much respected veteran of the profession, was so unfortunate as to fall recently and sustain a fracture of the femur at the hip joint. Dr. Buckley has been in practice for sixty years, and is greatly esteemed by a large circle of friends who will join in wishing him a speedy and complete recovery.

The medical faculty of Dalhousie University has decided upon several changes in the curriculum. Hereafter two "pre-medical" college years will be required of entrants. At least a full afternoon each week is set aside for specially directed study in library, laboratory or clinic. The fifth year will be devoted entirely to clinical work.

This year's meeting of the Medical Society of Nova Scotia is to be held at Sydney July 6th. The president, Dr. John J. Roy, of Sydney, has the support of several active committees and the indications are that the meeting will be unusually attractive and successful. A number of important matters affecting the profession are to come up for discussion.

Drs. H. E. Kelley and J. C. Wickwire, recent Dalhousie graduates, have been appointed medical officers to the Hudson Strait Expedition. This expedition leaves in July to spend about sixteen months in investigating the ice conditions of Hudson Bay and Strait, particularly as regards its navigation. A number of aeroplanes are to be used in the investigation.

The annual meeting of the Provincial Medical Board was held on May 13th. Besides Halifax members, Dr. Sponagle of Middleton, Dr. Cameron of Antigonish, Dr. Sullivan of Glace Bay, Dr. McLean, North Sydney, Dr. Bissett, Windsor, Dr. Lavers, New Ross, Dr. Farish, Yarmouth, Dr. Smith, Liverpool, and Dr. Morrison, New Waterford, were in attendance. The several reports of the year's activities were very satisfactory. Authority was given to enter 17 new names in the Medical Register. Drs. John G. MacDougall and W. H. Hattie, Halifax, were re-elected president and registrar respectively.

The degree in medicine was awarded to 27 candidates at the recent Convocation of Dalhousie University. One member of the graduating class, E. L. McQuade, unfortunately became infected while engaged at an autopsy a few days before Convocation, and was unable to be present. The Senate of the university decided that the circumstances warranted a departure from the rule respecting the conferring of degrees and authorized the president to go to the hospital and confer the degree upon him there. Dr. McQuade, after a very serious illness, is now making satisfactory convalescence.

Among those who hurried to the assistance of the people of Halifax, after the disaster of 1917, was Dr. G. DeN. Hough, of New Bedford, Mass., and all who were brought into contact with him at that time, and

remember his sterling qualities, will regret to learn of his death, which occurred on the last day of May.

At the Convocation of Mount St. Vincent College, held on the first of June, Dr. George H. Murphy, of Halifax, gave one of the addresses. He laid emphasis on the value of a good English education, and on the virtue of humility—"the necessary accompaniment of all true culture." Speaking as a physician he expressed the hope that those whose bodies and minds were developed in the ideal atmosphere and surroundings of Mount St. Vincent would do much to promote more thorough understanding and more efficient handling of the health problems of Nova Scotia.

Drs. Harvey Agnew and R. V. B. Shier, of Toronto, have been recent visitors of Nova Scotia in the capacity of lecturers under the Canadian Medical Association scheme for extra-mural post-graduate instruction. Although their itinerary involved rapid movement and gave their hosts little time to show them courtesies, it was a great pleasure to have them with us, and wherever they spoke their addresses were much enjoyed. They addressed branches of the Medical Society of Nova Scotia at Amherst, Sydney, Antigonish, New Glasgow, Halifax, Windsor, Middleton and Yarmouth. A fuller account of their tour will appear in the next issue of the *Journal*.

The Colchester-Hants Branch of the Medical Society of Nova Scotia held its annual meeting at Windsor on May 30th. Drs. Agnew and Shier, of Toronto, and Drs. S. L. Walker, of Halifax, were present and delivered much appreciated addresses. New officers were elected as follows: president, Dr. G. K. Smith, Hantsport; vice-president, Dr. J. B. Reid, Truro; secretary-treasurer, Dr. H. V. Kent, Truro.

The annual meeting of the Medical Association of Western Nova Scotia was held at Yarmouth on May 31st. Addresses were given by Drs. Agnew and Shier, of Toronto, and by Dr. Smith L. Walker, of Halifax. The association took exception to the general sale of iodized salt, as simple forms of goitre are uncommon in Nova Scotia. Dr. G. V. T. Farish of Yarmouth was elected president; Drs. H. T. Pothier, of Weymouth, L. P. Churchill, of Shelburne, and A. R. Melanson, of Eel Brook, vice-presidents; and Dr. T. A. Lebbetter, of Yarmouth, secretary-treasurer.

Dr. W. D. Forrest has been re-appointed chairman of the City Health Board, Halifax.

Dr. Allan R. Morton has retired from practice at Wolfville to accept a position on the medical staff of the Nova Scotia Hospital.

When Dr. R. R. Withrow, of Springhill, was responding recently to a hurry call to the country, his fine motor car took fire and was destroyed.

It is announced that Mr. Daniel Sutherland, an uncle of Dr. R. H. Sutherland of Pictou, has contributed $10,000 towards the cost of the new building proposed for the Pictou Memorial Hospital.

Dr. C. M. Bayne, who has been assistant medical superintendent at the Nova Scotia Sanatorium for some years has resigned from that institution an proposes to locate at Sydney as a consultant in tuberculosis.

A contract has been awarded for the erection of a new civic isolation hospital in Halifax. The new hospital will be in the "hospital zone", in the near neighbourhood of the Victoria General and other hospitals and of the Dalhousie Medical College.

Professors Cameron, Gibbs and Dreyer, of the Dalhousie Medical School, have gone to England for the summer. Professor Bean will spend the vacation in the United States. Professor Babkin and Gowanloch have gone to St. Andrew's to carry on research work there.

The Historical Society of Annapolis Royal has erected a tablet to the memory of the late Dr. Augustus Robinson, who was for many years a highly esteemed resident of the town and who took a very active interest in the society.

Mr. B. Evan Parry, supervising architect of the Federal Department of Health, spent some days in Nova Scotia late in May and early in June in connection with the proposal to erect annexes for tuberculosis at several of the local hospitals.

W. H. HATTIE

NEW BRUNSWICK

At the examinations at Halifax, for the Medical Council of Canada, the New Brunswick examiners included Dr. G. A. B. Addy, Dr. J. M. Barry, Dr. H. L. Abramson of St. John, and Dr. Melvin of Fredericton.

Dr. Howard Bustin who has been practising at Port Elgin for the last two years, has now removed to Fairville, N.B.

Dr. H. L. Abramson, Provincial Pathologist, has been again subpœnaed to appear at the Gallop murder trial at Roberval, Quebec.

At Moncton on June 7th, Mayor B. A. Taylor, in the presence of 3,000 people, uncovered the first sod for the construction of the new five storey building, the Hotel Dieu Hospital, to be located in that city by the Sisters of Providence. The new hospital will accommodate 100 patients and will cost in the vicinity of $40,000.00.

Miss Mary F. Bliss has resigned her position as Superintendent of the Soldier's Memorial Hospital at Campbellton, a position which she has held for over five years, and leaves to take a special course of study at McGill University.

Dr. L. M. Curren, Dr. G. B. Pest, Dr. G. A. B. Addy of Saint John, and Dr. G. C VanWart of Fredericton, attended the meeting of the Canadian Medical Association at Toronto

Under the direction of Dr. M. A. Oulton, a well-baby clinic has been established at Shediac.

At a meeting of the Canadian Social Hygiene Council in Toronto on June 13th, Dr. W. F. Roberts,

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Saint John, and Dr. H. I. Taylor of St. George were elected vice-presidents of this society.

Dr. R. S. Gass who has been practising in Chipman for the last year, left recently to take up work with the Rockefeller Institute in Alabama. Dr. Harold Baird has taken over Dr. Gass's practice.

Regulations for the sale of raw milk in the city and county of Saint John, previously discussed in these notes, have received approval by the Lieutenant-Governor and Council. It is felt that these regulations as drafted by Dr. Wm. Warwick will provide a safe article of diet.

Miss Margaret Pringle has resigned her position as Superintendent of the Fredericton Victoria Public Hospital. No successor has as yet been appointed.

On June 15th at Campbellton, Dr. L. G. Pinault had a narrow escape from drowning in the Restigouche River. The doctor was upset from a canoe and was only rescued with much difficulty, having lost his rod and the salmon he was endeavouring to land. Any fish large enough to capsize an experienced angler like Dr. Pinault, must be related to that famous Alphide, "the racing salmon of the Restigouche," whose exploits were chronicled some years ago, by Dr. McGeegan.

Dr. H. L. Logan of Salisbury has been appointed a coroner.

On the recommendation of Hon. H. I. Taylor, M.D., Minister of Public Health of New Brunswick, rabies, whether in man or any lower animals, is declared to be a notifiable disease, and Public Health regulations have been amended in that particular.

The Moncton City Hospital graduated a class of 11 nurses on June 12th. The General Public Hospital at Saint John graduated 28 nurses this year, the largest class in its history. The address to the graduates was delivered by Dr. J. M. Barry.

A. STANLEY KIRKLAND

TUBERCULOSIS HAPPENINGS IN THE MARITIMES

Three meetings in Moncton of representatives of tuberculosis interests in the three provinces were held. Twelve thousand five hundred dollars has been made available, from the Canadian Life Insurance Companies. Ten thousand dollars has been voted by the Provincial Government of Nova Scotia to place a bacteriologist in the Pathological Building, a secretary for the Nova Scotia Tuberculosis Commission and an additional travelling chest diagnostician. Two tuberculosis follow-up nurses have been appointed in Nova Scotia.

Public meetings have been held and local committees appointed in communities from one end of Nova Scotia to the other.

Dr. Hayes, a full-time commissioner has been appointed to the Nova Scotia Tuberculosis Commission.

Many financially poor tuberculous patients were helped to enter the Provincial Sanatorium.

Approval was granted for $125,000 enlargement of Jordan Memorial Sanatorium to cost $125,000 with provision made for its support. Increased aid was also given to Saint John County Hospital.

A material increase has been made in the admission of indigent tuberculous cases at the expense of the municipalities.

QUEBEC

Plans for the first of the buildings to constitute the new University of Montreal will be ready in a few months, stated Mgr. Piette, rector of the university, speaking at the annual convocation for awarding degrees. Soon an edifice will arise with a thousand feet of superb facade, in which will be housed the faculty of medicine, the school of pharmacy, the faculty of dental surgery, and well equipped laboratories.

An appeal will shortly be made on behalf of funds for St. Mary's Hospital. Hon. Joseph Dillon, chairman, announced that the objective set by the committee should be an easy one to reach, not only because it was a comparatively small amount, but also because there was a large number of patrons to whom an appeal could be made.

The Department of Psychology in the medical faculty of McGill University has been united with the Psychological Department and the two will work together in the future in the new extensive laboratories which have been built in Molson Hall. Dr. J. W. Bridges, Professor of Abnormal Psychology, who has hitherto lectured to medical students, has recently been transferred and is now a member of the faculty of arts. The appointment of R. B. MacLeod, M.A., to the position of sessional lecturer in this department is also announced. Mary W. MacLean, B.A., has been appointed as an assistant in the department.

That Montreal is doing little to forward education by actual observation of specimens in the several museums it possesses and is in this regard behind many of the other cities on this continent, is the opinion expressed by Dr. E. L. Judah, curator of museums at McGill. With the material available at McGill, definite efforts to start such work should be made. More and more emphasis is being laid on the value of visual instruction and the reports of the results achieved indicated that this method is growing in American education. It involves the illustration by museum specimens of the work covered; the memory of lesions seen is much stronger than that of lesions of which the student is only told. It is on this fact that visual instruction is based, and large amounts are about to be spent during the coming year by many cities to carry this method of instruction forward.

The Montreal Industrial Institute for Epilepties and Feebleminded is demonstrating the fact that with the proper training, many individuals who otherwise would be dependent are now able to take their place in the industrial life of the community. The institute accepts for training children and occasionally young adults, who are so handicapped as to be unable to obtain their education in the public schools and who without such tuition would be completely dependent on charitable organizations.

A strongly worded resolution was adopted by the Montreal Medico-Chirurgical Society at its meeting approving the recent action of the Provincial Board of Health in ordering certain milk plants of the city to close. The resolution, which was adopted unanimously by the society and copies forwarded to the City Council reads as follows:—"Whereas, during the

past three months, there has been in Montreal an epidemic of typhoid fever, and whereas, the means of preventing and controlling typhoid epidemics are well known, and whereas, these means are the safeguarding of the water, milk and other food supplies, by the Health Department, and, whereas, this society believes that the enforcement of the present milk by-law, meat inspection by-law and the proposed food inspection by-law, and the control of the water supply will prevent any further outbreaks. Therefore this society goes on record, as believing that the recent outbreak was due to the failure of the civic authorities to enforce the provisions of the civic health by-law concerning milk. The society also strongly feels that the citizens of Montreal do not receive the same consideration for the protection of health as do those of other cities of similar size, and would urge that the budget of the Health Department be made adequate for this purpose.''

We congratulate Dr. Lessard on the splendid year's report of the health organization in County Beauce, under the capable direction of Dr. Deschenes, and on the formation of additional county health services with full time doctors, nurses and sanitary inspectors. The medical superintendent of the excellent sanatorium at Lake Edward will attend clinics in the new county area of Lake St. John for diagnostic assistance.

We note with pleasure the tribute paid in the *Bulletin Medicale de Quebec* (March, 1927) to Doctor Arthur Rousseau, Dean of the Faculty of Medicine of Laval University on the occasion of his appointment as Membre Correspondant of the Academy of Medicine of Paris. Dr. Rousseau is the first Canadian to receive this honour, and it is a recognition not only of his brilliant scientific standing but also of his activities in the teaching of medicine and the part he has taken in the building up of numerous hospitals and other charitable institutions. We join with our French confrères in extending our warm congratulations to Dr. Rousseau.

ONTARIO

A description of a visit to Timmins and the district after an absence of two years, may be of interest, in that it allows one to compare the present day conditions with those of a few years ago.

South Porcupine is well provided for by a hospital, built by the Presbyterians. Well situated on a hill which overlooks the lake and the town, the hospital wards have a pleasant outlook. At the present moment it is being run by two graduates of Toronto General Hospital and is being kept up to the standard which their training demands. Obstetrical, medical, and surgical cases are accommodated, and are accommodated in surroundings that would do credit to a large hospital in a large city. The hospital is open to every physician and has filled a long felt want during a period when hospital beds were not available for any, save those working in the big mines of the area.

At the Dome Mines Hospital, Dr. Russell has been conducting a search for cases of silicosis, assisted by Dr. Kinsman; there is accommodation in this hospital of course, for the employees of the mines, the limited number of beds, however, means and always has meant, that only the actual workers can be accommodated.

At Timmins where the greater mining activities exist, many improvements are in evidence. There is an active group of physicians all doing work of an excellent character; major surgery is being done and as a result the enlargement of an excellent hospital, belonging to the Hollinger plant, is now well under way. From now on this hospital is to be thrown open to the physicians of the district and the Hollinger corporation are entrusting its management to the Roman Catholic Sisterhood, a step which should ensure its continued excellence. For many years this hospital has been very successfully conducted by Dr. Moore and his associates, more particularly for the employees of the Hollinger and MacIntyre mines. Dr. Moore and the directors of these mining interests, have long realized, however, that the needs of the district should be given more consideration and it is as a result of their recognition of this fact that the hospital now becomes open to the outside physicians and doubles its accommodations. The work at the Hollinger mine on the silicosis question, has become very active. Doctors Hague and McBain in charge of this work, conduct a daily clinic in the compressor plant which has accommodation and equipment superior to most chest clinics anywhere on the continent.

At another part of the town there is in existence, a small hospital for women, maintained by the Sisters who are in charge of the other larger institution.

Dr. Gwyn addressed the Medical Society of the Porcupine district on May 27th, taking as his subject, ''The anæmias''. There was an excellent attendance and a very active discussion.

Dr. Lemesurier addressed the Dufferin County Medical Association on June 8th, taking as his subject, ''Fractures of the lower extremity''. Dr. Gwyn spoke to the same gathering on the question of anæmia.

The *Canadian Lancet and Practitioner* for June contains an editorial protest against the methods by which the Ontario Provincial Ministry of Health carried out its programme of change in the administration of public health affairs. More time, it is said, should have been given to the consideration and discussion of such sweeping changes. However excellent in idea the legislation may have been, the execution of the plan need not have been such as to ''give offence to so many members of the profession and friends of the retired board.''

MANITOBA

Dr. D. A. Stewart recently addressed the medical students of the University of Minnesota on ''Disease and history'' and gave a talk at the Academy of Medicine at Milwaukee on ''Septic infections of the bronchi and lungs''. In addition he attended at Indianapolis the annual meeting of the National Tuberculosis Association of which body he is Vice-President.

Dr. J. D. Adamson has been appointed Chief of Medicine at St. Boniface Hospital replacing Dr. C. R.

Gilmour who has resigned. Dr. G. S. Fahrni is now President of the Medical Staff and Dr. J. C. Hossack has recently been appointed Medical Director of the hospital.

The new and handsome addition to Misericordia Hospital was dedicated by His Grace Archbishop Sinnott on June 12th and was thrown open to the public on June 24th. The building is of Tyndall stone and Claybank red brick and contains four storeys. The ground floor contains administrative offices, doctors' waiting room, internes' quarters, dispensary, admitting and casualty rooms; the second and third floors contain wards and large sun balconies; the fourth floor contains three general operating rooms, eye room, nose and throat room, orthopædic, cystoscopic, sterilizing and service rooms. The whole building is wired for radio so that the occupant of any room may enjoy music through the air by plugging in at the head of the bed.

Dr. J. A. Christilaw has sold his practice at Treherne to Dr. A. C. Rumball and is taking over the practice of Dr. R. E. Davis at St. James.

At the annual meeting of the Winnipeg Medical Society on May 20th the following officers were elected for the ensuing year: President, Dr. O. S. Waugh, Vice-President, Dr. F. T. Cadham, Secretary, Dr. Wm. Creighton, Treasurer, Dr. M. R. MacCharles, Trustee, Dr. A. H. Rondeau. The retiring president, Dr. J. D. McEachern, gave a thoughtful address on "The merit system applied to the hospital staff."

Manitoba was privileged to receive a visit from two able Toronto physicians, Dr. R. S. Pentecost and Dr. J. H. McPhedran, from May 30th to June 4th in connection with the extra-mural post-graduate scheme of the Canadian Medical Association. The points visited were Winnipeg, Birtle, Ninette (Manitoba Sanatorium), Brandon, Portage la Prairie, and Dauphin. Dr. O. Bjornson of Winnipeg accompanied the visitors to the two latter points and also to Birtle. Dr. Pentecost spoke on tuberculous lesions of the nose and throat, influenzal lesions of these regions, and vertigo, illustrating his remarks with lantern slides, and Dr. McPhedran spoke on duodenal ulcer and common colds. He insisted that these did not receive the attention they deserved, that many complications might be traced to them and that they should be treated by rest in bed until symptoms had disappeared.

Dr. H. D. Kitchen has been appointed part-time Medical Superintendent of Misericordia Hospital from June 1st.

ROSS MITCHELL

SASKATCHEWAN

The monthly meeting of the Regina District Medical Society was held at the Hotel Champlain. Dr. F. W. Hart of Indian Head presented a case of sarcoma of the kidney in a child of two years. Dr. P. L. Straith gave an excellent paper on abdominal pain. The June meeting of the society was held at Indian Head at which Dr. F. W. Hart, the President, presided. The members from Regina drove out by automobile and dinner was served at the Imperial Hotel. The following papers were presented: "Onset and presenting symptoms of pulmonary tuberculosis," by Dr. Mooney of the Fort Qu'Appelle Sanatorium; "Focal arthritis," by Dr. Tucker, Francis; "A case of encephalitis" was presented by Dr. H. Cochrane of Qu'Appelle.

Additions have been made to both the Providence and General Hospitals at Moose Jaw, 60 beds to the former and 51 to the latter.

The medical men of Saskatchewan gave a luncheon to Dr. R. Stuart Reid prior to his leaving for Vancouver where he will in future reside and practise his profession. After the luncheon Dr. Reid was presented with a gift from his confrères. In saying good-bye he spoke feelingly of the good relations which had existed between himself and his medical associates in Saskatoon. Dr. Reid received his L.R.C.P. and S. Edinburgh, in 1878, and has been in active practice since that time.

Dr. G. R. Peterson, F.R.C.S., and Dr. A. F. Malloy left for an extended visit to Europe. They expect to visit several hospital centres. Dr. Peterson, a member of the Senate of the University of Saskatchewan, will officially represent that university at the anniversary of the University of Louvain, Belgium.

Dr. Wm. E. Anderson is now practising at Broderick, Sask.

Dr. Levi Crane, Plenty, has moved to Colgate, Sask.

Dr. G. J. Whetham, previously of Moose Jaw, is now practising at Regina.

Dr. J. B. Trudelle, of Moose Jaw, has moved to Regina where he has opened up an office.

ALBERTA

Qualifications for Specialists in the Province of Alberta.—The Legislature of Alberta during the 1926 session amended the Medical Profession Act, by adding to section 70, thereof, the following clauses:—

"(2) No person shall advertise or hold himself out to the public as a specialist, or as being specially qualified in any branch of any class or system of practice in this section mentioned, without having received from the Registrar of the University of Alberta a certificate of having complied with such conditions precedent as to qualifications or fitness as may be prescribed by the Senate of the said University.

"(3) The said conditions may be based either upon the possession of certain diplomas or other professional qualifications or upon compliance with prescribed tests by way of examinations or otherwise.

"(4) Any person committing a breach of subsection (2) of this section shall be liable to the same penalty as if he had committed a breach of subsection (1).

"(5) Any breach of this section shall be deemed to be unbecoming and improper conduct within the meaning of section 45 of this Act.

Pursuant to the authority conferred upon the Senate of the University of Alberta, by the above, the following regulations have been enacted:—

1. The term specialist in the meaning of this Act shall be defined as follows:

A graduate of a medical school recognized by the Senate of the University of Alberta who having complied with the educational requirements set forth hereunder seeks the right to practise in some special field of medicine or surgery in the Province of Alberta.

2. Graduates who specialize without intervening private practice shall have one year's experience as internes in a recognized and standardized general hospital and shall then spend not less than eighteen months in training for their chosen specialty or in the equivalent of such training. The hospital for special study shall be connected with an institution capable of giving graduate instruction or it shall be a recognized teaching hospital in which instruction in the special department concerned is given. The candidates shall act as internes, externes or clinical assistants during the time of the special training referred to above and shall be required to show credit for attendance.

3. Graduates who practise medicine or surgery following graduation and subsequently take up a specialty shall spend eighteen months in a similar institution and under similar provisions as described in section (2). In the event of such a graduate not having held a graduate interneship in a general hospital prior to entering upon practice, a qualification of at least three years in general practice will be regarded as a necessary equivalent for qualifications to train for a specialty.

4. When considering applications, however, of persons who were licensed to practise medicine in the Province of Alberta prior to the passage of this Act due consideration shall be given to the length of time of such practice and the experience obtained in the specialty for which a license is sought.

5. It is further recommended that a special committee of the Senate, to be known as the Committee of Specialists' Credentials, consist of the following persons to be appointed to administer these regulations: the Dean of the Faculty of Medicine, the head of the Department of Surgery, the head of the Department of Medicine, the head of the Department of Pathology, the head of the Department of Bacteriology and Hygiene, the Deputy Minister of Public Health, if a medical doctor, the Registrar of the College of Physicians and Surgeons, of Alberta, and such other members of the medical profession in the province as may be appointed from time to time by the Senate on the nomination of the President of the University, providing, however, that any decision arrived at by this committee shall be subject to the confirmation of the Senate of the University of Alberta.

The Supreme Court of Alberta recently rendered a decision concerning the erasure by the Council of the College of Physicians and Surgeons of Alberta of one of the members, reducing this erasure to two years suspension. The learned judges suggested that an amendment be brought to the "Act Respecting the Medical Profession" giving the Council of the College of Physicians and Surgeons greater latitude in regard to suspensions. At present if the offence warrants something more than a year's suspension, erasure is the only penalty possible. This appeared to the Court more like a "life sentence" when the ends of justice might be attained by a suspension from the register of over a year.

The Federal Department of Indian Affairs has reduced the fees to physicians treating Indians affected with syphilis by over 50 per cent.

The following physicians have lately registered with the College of Physicians and Surgeons in Alberta: Dr. Harold G. Macfarlane, of Lake Louise; Dr. C. W. Moore, of Advocate, Nova Scotia; Dr. T. C. Michie, of Edmonton, and Dr. A. E. Ward of Edmonton.

Among the 1927 Alberta graduates in Medicine from McGill University were: Miss Christie, Miss Minnie Galley, John Howie, and Melvin Stauffer. At Toronto University: W. A. Crawford, E. A. Hunt, and A. W. Scott. At Alberta University: R. L. Anderson, D. F. M. Crawford, C. G. Davies, N. F. Flater, C. C. Haworth, G. G. Hollies, W. A. Macdonald, C. H. McKenzie, R. R. Maclean, H. L. Nix, H. E. Rowlinson, A. H. Sprague, F. F. Fallmann, J. Verchonin, and A. R. Wilson.

Dr. W. A. Crawford, a recent graduate of Toronto University, and a son of Dr. D. Crawford, of Craigmyle, one of the pioneer physicians of this province, has been appointed to an interneship in the Harper Hospital, Detroit.

Dr. F. F. Fallmann, a recent graduate of Alberta University, is now on the staff of the Mental Hospital at Ponoka.

Dr. Percy Sprague who graduated this year from Alberta University has accepted an appointment in the Provincial Pathological Laboratory.

Dr. William Hackney of Calgary and Dr. Harold Brown of Edmonton have returned from Spokane, Washington, where they attended the eleventh annual meeting of the Pacific Slope Oto-Ophthalmological Society.

Dr. C. E. Smyth, of Medicine Hat, has returned from California where he spent the past winter.

Dr. W. Merritt of Calgary, President of the Alberta Medical Association, and Dr. W. H. McGuffin, of Calgary, attended the annual meeting of the Canadian Medical Association.

Dr. F. W. Stockton, of Calgary, who was making fair progress towards recovery from his prolonged illness, is, we are sorry to learn, once more confined to his bed.

Dr. Morley G. Cody, of Calgary, delivered the annual address to the members of the Edmonton Academy of Medicine on the subject of "Chronic intestinal indigestion or cœliac disease."

We are pleased to note that Dr. J. S. McEachern, of Calgary, has fully recovered from his recent illness.

G. E. LEARMONTH

BRITISH COLUMBIA

The annual meeting of the British Columbia Medical Association is to be held at the new Georgia Hotel, Vancouver, on the afternoon and evening of Wednesday, June 22nd, concurrent with the Summer School of the Vancouver Medical Association. The afternoon session will commence at 4 p.m., and the evening session at 8 p.m. There will be a joint luncheon at 12.30 p.m., of the British Columbia Medical and the Vancouver Medical Associations, in the Georgia Hotel, June 22nd, at which the visiting speakers to the Summer School will be

XUM

guests of the British Columbia Association. The luncheon address will be given by Dr. H. C. Moffitt, Professor of Clinical Medicine, University of California.

An unusually large number of economic problems have been dealt with during the past few months by the Provincial Medical Association, and the business office has been kept very busy. A considerable amount of work has been done in providing *locum tenens*, and a number of permanent positions have been filled.

Numerous enquiries have been received regarding medical industrial contracts, and advice given to both doctors and employers has resulted in improved conditions for the doctors and a better understanding on the part of employers.

Certain troubles have been taken up with the Indian Department. In two cases we were able to get the Indian Commissioner, Mr. Ditchburn, to recommend a yearly grant, and on a general complaint from our executive secretary, Mr. Ditchburn promised to make a survey of the province and see personally into the grievances of doctors doing Indian work with a view to recommending at Ottawa an increase in remuneration where it may be considered desirable. Mr. Ditchburn seems anxious to do the right thing and has already surveyed part of the province.

Provincial government grants in two more cases have been obtained for doctors in the less settled districts who, without such relief, could not, for financial reasons, have otherwise remained.

We have also in hand with the provincial government the question of the payment of doctors doing work on indigents in hospital. On investigation we find this to be an urgent question, affecting all parts of the province. It is hoped to find some solution whereby the doctors may receive some remuneration for this important, and time absorbing work.

Other matters in hand are the treatment of eye conditions in school children by an irregular practitioner; payment to specialists doing Workmen's Compensation Board work for the "Marine Hospitals Service", and we also have a committee investigating the new "Provincial Turn-Over Tax" and its effect on the medical profession.

The executive has in hand the very important matter of a possible appeal in the case of Seldon vs. Zambowski, the decision in which vitally affects every medical man. The British Columbia Medical Council and the Canadian Medical Association have both been communicated with in this matter.

We would draw special attention to the following:—

If there are any members of the British Columbia Medical Association who have done examinations for the "Provident Mutual Benefit Association," for which they have not received payment, please send particulars to the Executive-Secretary, British Columbia Medical Association, 927 Vancouver Block, Vancouver.

In April, Dr. Thos. McPherson, President of the Victoria Medical Society, and Dr. W. E. Scott-Moncrieff, of Victoria, visited Alberta to give post-graduate lectures under the auspices of the Canadian Medical Association. The following is a copy of a letter received from the Secretary of the Alberta Medical Association dated May 16th:—

"Dr. McPherson and Dr. Scott-Moncrieff did us good service at the following points: Lethbridge, Medicine Hat, Calgary, Red Deer and Edmonton.

Owing to the late spring and frequent snowstorms, the roads did not permit as many outside men to motor to the meetings as otherwise would have been the case.

The meetings were well worth while and many favourable reports have come to this office. An outstanding surgeon of Lethbridge said, 'It was well worth while,' Medicine Hat reported, 'We appreciate very much the benefits received from these lectures.' The morning clinics at Calgary were well attended but not so many men were present at the evening lectures, which were reported by those privileged to hear them as 'most excellent'.

It was a great kindness for the men to take the time from their private practice to come to the men here. We have thanked them and we want to further thank you for your trouble in making the arrangements."

There was a special meeting of the East Kootenay Medical Association at Cranbrook, B.C., on May 28th and 29th. Clinical addresses, under the joint auspices of the Canadian Medical Association and British Medical Association, were given by Dr. George Seldon and Dr. Wallace Wilson both of Vancouver. Dr. Seldon took for his subject "Surgical conditions of the abdomen", and Dr. Wilson, "Medical aspects and treatment of goitre". A most enjoyable and instructive time was spent by practically 100 per cent of the doctors in this district.

The annual meeting of the No. 6 District of the British Columbia Medical Association was held in Nanaimo on Friday, May 27th. The following clinical addresses were given:—

Dr. A. B. Schinbein, President of the Vancouver Medical Association, on "The poor surgical risk" (surgical aspect), Dr. C. E. Brown, of Vancouver on "The poor surgical risk", (medical aspect). Dr. J. A. Sutherland, of Vancouver, on "Pains and disability arising from lesions about the anus." Dr. J. H. MacDermot, President of the British Columbia Medical Association, on "Medical economics and the work of the provincial association.

The following officers were elected for the coming year: Dr. A. D. Morgan, Alberni, President; Dr. W. E. J. Ekins, Nanaimo, Vice-President; Dr. O. G. Ingham, Nanaimo, Secretary-Treasurer. There was an excellent attendance at this meeting many motoring from the long distances of Alberni, Courteney, and Cumberland.

On Sunday, May 29th, a post-graduate meeting was held at Chilliwack, the first of its kind ever held at this place. Lectures were given by Dr. G. A. Lamont, of Vancouver, on "Infant feeding"; Dr. A. W. Hunter, (Past-President, Vancouver Medical Association) on "The enlarged prostate and its bladder complications"; Dr. J. H. MacDermot, President British Columbia Medical Association on "Medical economics and the work of the provincial association".

The visiting doctors were the guests of their Chilliwack colleagues at a dinner held at the Empress Hotel. In addition to the Chilliwack doctors there were also present at the meeting, Dr. T. A. Swift and Dr. J. M. McDiarmid of Abbotsford, and Dr. B. B. Marr of Fort Langley.

Dr. G. A. Lawson, senior interne at the Vancouver General Hospital, has been appointed Medical Officer at Port Alice, B.C., and will take up his duties on July 1st. He will relieve Dr. J. A. Street who is going east for twelve months' post-graduate work.

Dr. J. C. Grimson of Vancouver who for some months has been acting as assistant to Dr. W. C. Walsh, has taken over the practice of Dr. A. G. Elvin, of Ladner. The latter is acting as *locum tenens* for his brother, Dr. R. J. Elvin, of Vancouver, who has left for two months' post-graduate work.

Dr. W. J. Lightburne, who during the last few

months has been assisting Dr. H. C. Wrinch at Hazelton, has left the province to practice in the State of Washington.

Dr. P. A. C. Cousland, until recently employed at the Vancouver General Hospital, will act as Medical Officer for a short time on the cable ship *Restorer* whilst the boat is carrying out repairs between Bamfield and Vancouver.

Dr. A. S. Underhill left Vancouver on June 1st, for Kelowna, where he will assist Dr. B. deF. Boyce.

At the last meeting of the winter session of the Vancouver Medical Association a resolution was passed approving the establishment of a Sick and Indigent Fund for the Association, thus fulfilling the last of the objects for which the association was incorporated 21 years ago.

Dr. W. E. Ainley, Dr. F. W. Brydone-Jack and Dr. T. H. Lennie, who left at the beginning of the year for Europe have returned home and resumed practice. They speak very enthusiastically of the wonderful facilities for post-graduate work in Vienna. Dr. H. Spohn, the fourth member of the party is staying over in the east to give an address at the annual meeting of the Canadian Medical Association.

The new tuberculosis wing of the Vancouver General Hospital was opened on Friday, June 3rd, when forty-four patients were transferred from the old temporary structure. A new building with private wards will be erected on the old site.

Col. W. P. MacArthur, R.A.M.S., Professor of Tropical Medicine, Royal Army Medical College, London, England, during his stay in Vancouver en route for China as Consultant in Tropical Medicine to the Troops, delivered an interesting address to the Association at Shaughnessy Military Hospital on June 6th. The Colonel's subject was "Old time epidemics."

Dr. J. G. MacKay left on May 26th, for Cincinnati. While in the east the doctor will attend the meetings of the Mental Hygiene Council. He expects to be absent from Vancouver for about a month.

Dr. Robert Crosby and Mrs. Crosby are at present touring in Europe and do not expect to be back in Vancouver till August.

J. EWART CAMPBELL

UNITED STATES

Doctors who lived formerly in Illinois, or who are descendants of pioneer physicians of the "Illinois country" will hear with interest that Volume One of the *History of Medical Practice in the State of Illinois* is ready for delivery. The History has been written under the supervision of a committee appointed by the Illinois State Medical Society as a commemoration of its seventy-fifth aniversary but more especially to make a living tribute to those valiant men of the medical profession who played so able a part in the exploration, settlement and development of the Illinois country. Volume Two is now in course of preparation.

Book Reviews

Immunity in Syphilis. Alan Chesney, M.D. 85 pages. 163 reading references. Price $2.50. The Williams & Wilkins Company, Baltimore, 1927.

We are indebted to Dr. Chesney for this excellent summary of our present knowledge of immunity in syphilis. During the past century, immunity in syphilis has been the subject of much clinical and experimental investigation, and, as a result, numerous theories have been advanced, many of them conflicting with one another. In this work the author considers briefly all the more important claims and theories, and brings before us those which may be accepted as established.

The older clinical observations of the last century are compared with modern experimental work which has been carried on since the discovery of the treponema pallidum. Recent investigation seems to confirm the opinion of the early clinical observers that the host gradually acquires a resistance to a second infection if the disease is untreated. Neisser's theory that the acquired refractory state in syphilis is dependent upon the persistence of foci of syphilitic infection is discussed in detail, and the author concludes that, while the question may still be open, the weight of present evidence is against this view. In regard to active immunity, all workers agree that the attempt to produce active immunity to syphilis in man or animals has failed. Passive immunization, while claimed by some, remains unproven.

The mechanism of immunity in syphilis is not clearly understood. There is little evidence that antibodies are responsible for acquired resistance, but, unquestionably the tissues react differently in the syphilitic individual as compared with the normal, when new virus is introduced. However, man seems incapable of eliminating syphilitic infection from his body unaided.

Dr. Chesney has presented his argument very clearly and concisely. Each subsection is summarized and a general summary with extensive bibliography concludes a very readable and interesting monograph.

C. J. TIDMARSH

Clinical Neurology. Prof. Dr. Hans Curschmann, translated by Edward A. Strecker, A.M., M.D. and Milton K. Meyers, B.S., LL.B., M.D. 410 pages. Price $3.50. P. Blakiston's Son & Co., Philadelphia, 1927.

Neurology to-day lends itself well to a clear presentation of many interesting signs and symptoms and their interpretation. This small book as indicated in the foreword is intended to assist the practitioner in the solution of his neurological problems. The practitioners are early informed that they "are hopelessly out of their element when confronted with a neurological situation" and are frequently reminded of their shortcomings throughout the text. With such a frank expression of the practitioner's disabilities and an expressed desire to terminate this state of affairs, one looks for a simple and effective remedy. While the fundamentals of neurology are in the main

outlined correctly, there are many defects both in the quality and arrangement of the subject matter. Many chapters begin with the phrase "Points of Interest for the Practitioner" followed by commonplace observations which are really not . points at all. Tabes dorsalis is described in a chapter with Friedreich's ataxia instead of its logical place beside General Paresis in the chapter on "Syphilis of the nervous system."

In the matter of treatment the practitioner would expect to get safe and sound advice in such a manual. Well tried methods should receive attention first, and remedies of doubtful value should be clearly indicated. This is not always done. For instance, one gets the impression that intensive salvarsan therapy, silver salvarsan and other arsenical preparations given in courses every four or six months are proper treatment for multiple sclerosis. The reviewer can see no reason why, nor can he find good authority for subjecting the youthful and innocent victims of this malady to such meddlesome, expensive and dangerous treatment.

In Sydenham's chorea, in addition to the usual remedies it is suggested that "if there is a blood stream infection it should be controlled by suitable intravenous medication." It is not explained how the practitioner may determine the presence or nature of the infection, nor what particular intravenous medication will control blood infection in chorea. This statement, while not specifically advising any drug, strongly suggests meddlesome interference.

In the discussion of functional nervous diseases the writers have not avoided the common error of using psychological and neurological terms of obscure meaning without adequate definition. Such terms as "akinesia algera," "sublimation," "catharsis" and "non-static components" are used without sufficient explanation and cannot be said to add clarity to the text. While many useful points of treatment are emphasized it is not much comfort to the practitioner to be told "that the phenomenon of hysteria, psychasthenia and neurasthenia should not be dismissed until it has been traced to its psychological source;" a feat which is seldom accomplished by those who class themselves as experts in this particular field.

The reviewer is disposed to suggest that a better work would have been produced if the writers had made it a wholly personal task. They have, however, translated a foreign work which did not have sufficient merit to warrant a translation at all and they virtually endorse this criticism by making numerous additions to and alterations of the original text. Only in a general way do they indicate what is original and what is not.

KENNETH A. MACKENZIE

Tuberculosis: Bacteriology, Pathology and Laboratory Diagnosis. Edward R. Baldwin, M.D., S. A. Petroff, Ph.D., and Leroy S. Gardner, M.D. 342 pages, 82 engravings and 4 coloured plates. Price $4.50. Lea & Febiger, Philadelphia, 1927.

This is a thoroughly sound book on tuberculosis. There is probably no other disease around which more writing has accumulated, and it is becoming more difficult to choose what is reliable and up to date. There are certain sources of information, however, which have always commanded respect and may be depended on for guidance, and amongst these the Saranac and Trudeau laboratories rank high.

The authors express the hope that this manual, which is the result of their study, and experience in their laboratories, may be useful for those making a special study of tuberculosis, but the book is so clearly written that it will have a more general appeal.

Points which have been and still are the subject of debate are dealt with clearly, but with no dogmatic insistence. Direct inheritance of tuberculosis they point out, is not supported by experimental observations or sound clinical evidence. Baumgarten's theory in particular is discussed, but is shown to lack the support of facts, particularly the suggestion that the bacillus is conveyed from mother to child as some form of filtrable virus, which is capable of remaining dormant and of later developing into the disease. Unless there is placental disease in the mother the possibility of the child being infected at birth does not seem to be possible. A particularly striking proof of this has been given by the study of a group of 433 French children removed from their tuberculous mothers at birth and placed in the country under special precautions against infection. These children have been frequently examined over a period of five years and not a single positive tuberculous skin reaction has been obtained.

The book may be highly recommended, not only for its material but also for its convenient size and the excellence of its printing and illustrations.

H. E. MACDERMOT

Surgery or Neoplastic Diseases by Electrothermic Methods. George A. Wyeth, M.D. Preface by Howard A. Kelly, M.D. 298 pages, 137 illustrations. Price $8.25. Paul B. Hoeber, Inc., New York. Macmillan Co. of Canada, Toronto, 1926.

This book, which is more than a monograph, presents the subject in a well turned out, and presentable volume. It is profusely illustrated with good plates.

The first hundred pages contain a description of high frequency currents, bipolar, and monopolar endothermy, and the endotherm knife. It is due to the use of this latter instrument that the author claims he is able to produce many of the excellent results cited. Within these first hundred pages is also contained a definition of the terms employed, such as, endothermy, diathermy, etc., which enables the reader to understand the descriptions given; hitherto much of what has been written in the past is only a maze of misused nomenclature.

The remaining two hundred pages are taken up with the author's attempt to show what electrothermic methods will accomplish when applied surgically to accessible tumours. In support of his arguments he quotes so liberally that the reader is soon placed in a fog of quotations to which there seems no end.

Endothermy is explained up to a certain point, beyond this the student must be taken by experience or an expert. Cases are cited, and pictures shown demonstrating some very remarkable results in the treatment of malignant growths of the face, and mouth. Good results are also shown in cases of rectal, urethral, bladder, and skin lesions after treatment by electrothermic methods. No end results are given.

The index consists of a mixture of references to subject matter, and authors quoted; the latter are very numerous.

The information in this book could have been conveyed to the reader in a much less discursive form, and in that way made more interesting. To anyone wishing to get a good understanding of what endothermy is, the first hundred pages can be recommended, as there one finds an excellent description, concise and understandable, of high frequency currents.

O. S. WAUGH

Basal Metabolism in Health and Disease. Eugene F. DuBois, M.D. 431 pages, 92 illustrations. Second edition. Price $5.00. Lea & Febiger, Philadelphia, 1927.

This book was written by one who knows his subject, but probably equally important to the great majority of readers, it was written by one who knows how to impart his knowledge to others. A thorough understanding of the phenomenon of basal metabolism

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demands a knowledge of many facts of chemistry, physics, mathematics, physiology and pathology. To compile all these into one work would result in a publication of such volume as to materially limit its usefulness for the great majority of those who now seek to understand this phenomenon, how it may be observed, the many variables which may influence it in health and disease, and the clinical significance of its variations. Dr. DuBois has succeeded in putting himself in the place of the average internist and realizing his difficulties. By critically combing the many facts he has recorded practically all that is known to be of practical usefulness in an edition of less than 400 pages. In spite of these few pages the book is a library.

After a few brief remarks on the historical aspect of the subject, fundamentals are considered. These include ideas of the metabolism of carbohydrates, fat and protein, and the minimum essentials concerning physical phenomena, such as the gas laws, the physics of heat,.etc. With a knowledge of these fundamentals one may obtain a clear conception of basal metabolism in general, and the various technical procedures. There then follows a brief survey of the general principles of the respiratory apparatus, and in this chapter one gets a clear idea of the different types, their application and their limitations. The chapters on the estimation of the body surface and the selection of normal standards are brief, but the essentials are there. In another chapter normal basal metabolism and its vagaries are discussed. For the internist who must rely upon his own interpretation of the results of the tests, this and the remaining final chapters are probably the most important in the book. In these final chapters the basal metabolism in different conditions is discussed. These include fever, undernutrition, over nutrition, obesity, diabetes, disease of the blood, the thyroid, pituitary, adrenal and sex glands. The literature on these conditions has now become voluminous. When, however, facts and theories are separated, little is known, and that which is known will be found in these few chapters. This book can be highly recommended.

I. M. RABINOWITCH

A Manual in Preliminary Dietetics. Maude A. Perry, B.Sc. 141 pages. Price $1.25. The C. V. Mosby Co., St. Louis. McAinsh & Co., Toronto, 1927.

This small volume consists of a series of lessons in practical dietetics, designed particularly for the instruction of nurses. The chapters are planned to supplement a practical course in the subject so that the student may combine theory with demonstration and laboratory work. The first lesson deals in an elementary manner with the physiological principles underlying digestion and assimilation. The sources, chemical composition, and preservation of the various simple foods, such as milk, eggs, and meat, are then discussed, followed by instruction in the preparation of more elaborate dishes. The art of meal-planning and menu-making is briefly but concisely outlined, with a more detailed discussion of factors such as fever, age, and occupation, which affect food requirements. Finally the rudiments of food analysis, and the computation of the calorific value of diets, are explained.

The book contains precisely what the nurse or housewife should know in regard to the science of nourishing the body in health and in disease, and to them it may be strongly recommended by the physician.

E. S. MILLS

Transfusion of Blood. Henry M. Feinblatt, M.D. 137 pages, 24 illustrations. The Macmillan Co. of Canada, Toronto, 1927.

This little book is a brief, concise account of the various methods of blood transfusion. The author considers the historical aspect briefly, the blood testing that is so necessary at greater length, and devotes considerable space to the various blood groups, their relationship to proper selection of donors, to the production of reactions, and even to their medico-legal importance.

He describes the various methods and illustrates some, as Unger's apparatus, very fully. He deals very completely with his own method, where a valve is used with the ordinary 20 c.c. record syringe.

The little volume attempts to deal with a very live subject somewhat sketchily, and the result is less than a full monograph and more than an introductory work. It will be of value to those who are doing blood transfusions by any method, and who desire to review the literature, especially on any particular phase of this work. Each chapter is followed by a very complete reference to the subject matter, and this alone makes the volume very useful. It will also be very valuable to teachers and lecturers, as it quickly enables them to get data on any portion of this subject. The book will be more useful to those who have been doing transfusions than to beginners.

CHAS. K. P. HENRY

Health Supervision and Medical Inspection of Schools. Thomas D. Wood, A.M., M.D., College Physician, Columbia University, and Hugh Grant Rowell, A.B., M.D., Physician to the Horace Mann Schools, Lecturer and Assistant Physician, Teachers College, Columbia University. 598 pages, illustrated. Price $8.25. Messrs. W. B. Saunders Company, London and Philadelphia. Canadian Agents—Messrs. McAinsh & Co. Limited, Toronto.

In this book, medical inspection of schools and supervision of child health is dealt with in a most comprehensive and exhaustive manner. It commences with an historical review in which medical inspection of schools is followed from its introduction in 1833, through varied ramifications and improvements to the year 1926.

The principles governing the organization of health work for schools and the various forms of activities to be followed are dealt with. There is a chapter devoted to the cost of the work, accompanied by standard forms showing procedure in various cities.

A point of importance taken up is the question of the personal liability of Health Officers as to the possibility of their being sued for damages on account of official acts.

The control of communicable diseases among school children is made the subject of a chapter. Forms for keeping records are given, and standards for exclusion and re-admission for transmissable diseases are recommended. The regulations of the City of New York governing this phase of the work are given in full. Diphtheria, scarlet fever and smallpox prevention are discussed, particularly with regard to their control and preventive inoculation.

There is a chapter on the yearly health examination, elaborated by standard forms for the use of examiners. An account is given of the means by which dental inspection is carried out; included in this is a description of tooth brush drill, etc.

A chapter on physical defects treats of the various types of these such as those affecting the eyes, chest, skin, glands and throat, orthopædic, neurological and psychological defects, also goitre and hernia.

A description of the special classes for unusual types of children is given. The various mental tests, Binet, Galton, etc., are discussed in a chapter accompanied by copies of standard forms and tables. Such subjects as fresh air classes, outdoor schools, sight-saving classes, speech classes, classes for the deaf, the blind, for cardiacs and epileptics, the treatment and care of mal-nourished pupils, and corrective gymnas-

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tics for children with orthopædic defects, are dealt with here.

Consideration is given to the construction of urban and rural school buildings and standards are suggested for lighting, heating, ventilation, fire protection, plumbing and water supply. This part of the book is illustrated.

The importance of supervising the health of teachers is emphasized, a matter which, up to now, seems to have received little attention.

The concluding chapters are devoted to mental hygiene, health education, health publicity, health supervision of the pre-school child, and health of the child in industry.

The authors are to be congratulated on producing a work which will likely become a standard of reference for those engaged in medical inspection of schools and health officers. The book is well written, well arranged and well turned out. The reproductions it contains of forms, tables and regulations add greatly to its value.

A. J. DOUGLAS

The De Lamar Lectures. 1925-1926, of the School of Hygiene and Public Health, Johns Hopkins University. Edited by W. H. Howell. 226 pages, illustrated. Price $5.00. Williams and Wilkins Co., Baltimore, 1927.

This volume embraces the De Lamar Lectures given during the session of 1925-1926 at the Johns Hopkins University.

For the most part these lectures represent the newer thought and most advanced ideas in preventive medicine. It is sufficient to read the list of contributors to realize how fortunate the school was to secure as lecturers such distinguished authorities on various phases of public health work.

There are thirteen lectures in all, as follows: the prevention of simple goitre as a public health problem, by David Marine; the present status of industrial toxicology in the United States, by Alice Hamilton; the necessity of education in the control of cancer, by Frances Carter Wood; some problems in rural hygiene, by Frederick W. Sears; industrial housing and public health, by Thomas Adams; intensity surveys of hookworm infestation, by W. G. Smillie; the absolute and relative value of laboratory procedures in the diagnosis of tuberculosis, by Edward R. Baldwin; body build and longevity, by Louis I. Dublin; the present status of our knowledge of the etiology of pellagra, by Joseph Goldberger; constitutional types in relation to disease, by C. R. Stockard; heliotherapy in the treatment of tuberculosis, by Horace LoGrasso; motor vehicle accident prevention, by Robbins B. Stoeckel; William Farr, the father of English vital statistics, by Sir Arthur Newsholme.

The idea of having these lectures made available to the public in book form is a good one. There is no doubt these volumes will be looked for every year and will be read with great profit by all interested and engaged in public health and preventive medicine.

R. ST.J. MACDONALD

Examination of Children by Clinical and Laboratory Methods. Abraham Levinson, B.S., M.D. Second edition. 192 pages, 85 illustrations. Price $3.50. The C. V. Mosby Co., St. Louis, 1927.

This book may be divided into two parts. The first five chapters deal with the case history and physical examination of the child, and the remaining twelve chapters consist of descriptions of laboratory methods. The first part contains much information, concisely given, which will be of definite value to the busy practitioner. The excellent sample charts of the case history and physical examination, which the author states "have been added with the hope of supplying a working outline for the busy physician", are so complete that in their present form I doubt whether the "busy physician" will fill them out with each patient. They might well be supplemented with much briefer outlines which would still contain the essential points.

The last twelve chapters constitute a most complete outline of laboratory and diagnostic methods applicable to the examination of infants and children. As many of the methods described are not only quite simple, but of definite practical value it must not be inferred that this portion of the book is of value to only hospitals and other large clinics. There are some minor points on which I do not agree with the author, such as the statement "glucose may be given subcutaneously but occasionally it may produce an irritation and even sloughing of the skin. It is therefore best to give glucose intravenously or intraperitoneally." In our experience we have given many thousand subcutaneous injections of 5 and 10 per cent solutions of chemically pure glucose with less than half a dozen instances of sloughing. On the other hand, considerable abdominal distension generally takes place after its intraperitoneal injection. The author has made no mention of the use of toxoid (antitoxin Ramon) in the prevention of diphtheria.

Although the book in its present form may be recommended as a valuable addition to the physician's library, still, on reading it over one feels that the author might have increased its usefulness if, instead of making it largely a compilation of methods, he had expressed more fully his own experience as to their relative value and usefulness.

F. F. TISDALL

Management of the Sick Infant. Langley Porter, B.S., M.D., M.R.C.S., L.R.C.P., and William E. Carter, M.D. Third edition, revised, 726 pages illustrated. Price $11.00. The C. V. Mosby Co., St. Louis. McAinsh & Co., Toronto, 1927.

This is the third edition of a work both popular and helpful. It is well printed on good paper and is copiously illustrated. There are 726 pages which include a good index and a number of useful formulæ and recipes. The book deals with the principles and methods generally accepted on this continent as sound in the care of sick infants. The subject of nutrition and nutritional disorders is dealt with on well established lines. The section on maternal nursing is good, and emphasizes the uselessness of stuffing the mother with milk and gruels in attempting to increase her milk supply. But one is surprised to find that scraped beef is recommended for rachitic nurslings—and that lime juice is advocated (*inter alia*) as an antiscorbutic (unless it be the juice of fresh limes). The technical methods employed in the diagnosis and treatment of infantile diseases are of the approved kind and are given in clear detail. Altogether the book will be found a useful companion to any physician caring for infants, both in private and in hospital practice.

L. M. LINDSAY

Health Record for Children. J. Theron Hunter, M.D. 52 pages. Williams & Wilkins, Baltimore, 1927.

I may say that this book is a concise and neatly prepared one. It makes it easy for the parent to keep an accurate record of all data pertaining to the health or illnesses of the child.

D. B. LEITCH

Local Immunization. Specific Dressings. A. Besredka. translated by Harry Plotz, M.D. 216 pages. Price $3.50. Williams & Wilkins Co., Baltimore, 1927.

Dr. Besredka presents a rather unusual point of view in regard to immunization. However much at variance the schools of thought may be in respect to the phases of immunity, there is on the whole agreement that the process involves the participation

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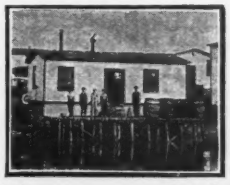

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of antibodies. Dr. Besredka's conception, however, is that immunization may be induced locally, and without the participation of antibodies. He marshalls a large number of facts in support of this idea, and has applied his theory successfully in various forms of vaccino-therapy.

This application is particularly interesting in the case of staphylococcus and streptococcus infections. The difficulty of producing immune sera for these bodies is well recognized, but Dr. Besredka shows that if dressings soaked in a culture of straphylococcus be applied to the shaved skin there is a resultant immunity in the area of skin so treated. These observations suggest very useful possibilities in the treatment of obstinate chronic skin infections.

H. E. MACDERMOT

Epidemic Diseases of the Central Nervous System. Arthur Salusbury MacNalty, M.A., M.D. 194 pages. Price 12/6 net. Messrs. Faber & Gwyer, London, 1927.

Certain disorders of the central nervous system are both obscure and rare, and may therefore be regarded by the average medical man as somewhat outside of his province. But the term "epidemic diseases" of the nervous system implies conditions which may still be obscure, but can no longer be considered as rare, and therefore demand attention more generally.

Dr. MacNalty has shown that from the epidemiological point of view the study of such diseases as poliomyelitis, encephalitis lethargica, and cerebro-spinal meningitis is justified on grounds other than the inherent interest of the subject. It has become evident that these epidemic nervous diseases are decidedly on the increase, but no explanation can yet be given of the rapidly increasing susceptibility of the central nervous system to attacks of epidemic disease.

The important point is brought out that the chain of infection in poliomyelitis is apparently completed through the medium of healthy carriers. Encephalitis lethargica seems fairly certainly to be an infective disease and is liable to manifestation in epidemic form. We know the causative organism in cerebro-spinal meningitis, but cannot say what combination of circumstances will result in causing an epidemic.

Dr. MacNalty concludes by pointing out that both poliomyelitis and encephalitis lethargica are on the increase in England and that preventive medicine must strive to the uttermost against it. One problem to be solved is the susceptibility to infection and this may give important guidance as to control of the epidemics.

H. E. MACDERMOT

The Harvey Lectures. Delivered under the auspices of the Harvey Society of New York, 1925-1926. Series XXI. 229 pages, illustrated, Price $4.00. The Williams & Wilkins Co., Baltimore, 1927.

The published lectures of the Harvey Society of New York form a series of valuable contributions to medical literature. Following the usual scheme, the present volume consists of lectures on medical and ancillary subjects delivered by men of note who, by personal investigation, are well qualified to deal with the particular topic. The lectures may therefore be regarded as authoritative surveys of the several subjects considered, though naturally, and advisedly, personal contributions obtrude themselves throughout. The seven titles in the publication under review cover a broad field, and the lectures themselves represent in nationality wide-spread schools of research.

In the first lecture Prof. F. R. Nager, of Zurich, deals with the light shed "On Some Recent Otological Problems" by histological investigation. His plea which he supports with some detail is that such a study is of practical and not merely scientific value. The address by Dr. John H. Northrop of the Rockefeller Institute, New York, is a highly technical discussion of "The Dynamics of Pepsin and Trypsin". Quoting his own experimental evidence he argues the question as to how far enzyme action is of a nature apart from ordinary chemical reactions. Dr. Warren H. Lewis, of the Carnegie Institution of Washington, deals in a very attractive lecture with "The Transformation of Mononuclear Blood Cells into Macrophages, Epithelioid Cells, and Giant Cells". He thus continues a protracted controversy with, however, the support derived from his direct blood culture method. The title concisely indicates his reasoned conclusions. The fourth lecture is a very comprehensive review of "The Parathyroid Glands" by Dr. J. B. Collip. This lecture (republished from *Medicine*) apart from a résumé of his own pioneer contributions is a valuable critical review of the extensive and controversial subject. "Empiricism and Rationalism" by Dr. Edwin B. Wilson, of Harvard, is an illuminating philosophical study without undue technical detail of the place value and application of statistical method. Dr. Knud Faber, of Copenhagen, has contributed an exceedingly interesting sketch of the progressive development of the fundamental principles underlying medical therapy. His "Historical Outline of Medical Therapy" is an attractive survey of the scientific movements behind methods of treatment. The concluding address is by Dr. B. Brouwer of Amsterdam on "Comparative anatomy and Neuro-Pathology." He deals with such topics as cerebellar topography, the rôle of the inferior olives, the histological arrangement of the oculo-motor nucleus. He further discusses the possible arrangement of the sensory pathways in routes which he identifies as "non-autonomic" and "vital".

It will thus be seen that the series is sufficiently diversified to make a wide appeal. G. SPENCER MELVIN

Transactions of the American Association of Genito-Urinary Surgeons. Vol. xix. 411 pages, illustrated. Williams & Wilkins Co., Baltimore, 1926.

The transactions of this representative body of American urologists present a very fair cross section of the year's progress in urology on this continent. This year's volume is mainly clinical in character and covers the entire urological field. Among the papers presented are those of an interesting symposium on pyelonephritis, participated in by Chute, Caulk, Quinby and Braasch, and a study of anomalous renal vessels by Sanford. The group of papers on the bladder and prostate, particularly those dealing with bladder decompression and the results of punch operations were followed by an interesting discussion. With regard to the latter, the general impression was that there is a field for this minor attack on prostatic obstruction. Townsend presented a new instrument for the prevention of hæmorrhage after prostatectomy. Randall discussed the rôle of epididymitis in prostatectomy and concluded that bilateral vaso-ligation should be performed as a preliminary step. Rather significant was the report by Barringer of a case in which carcinoma of the prostate was apparently cured by the use of radium. Colston and Scott, in reporting four cases of horseshoe kidney, stressed the possibility and importance of a preoperative diagnosis. McCarthy and Killian presented an interesting study on the composition of urinary concretions. Kretschmer analyzed 73 cases of true prostatic calculi.

The only experimental work reported was that of Williamson in his further studies on transplantation of the kidney. The ingenious McCarthy was responsible for a number of new instruments.

The volume is an excellent and creditable one and reflects honour upon the Association. The papers presented at its annual meeting are here published, and are well worth careful study. FRANK S. PATCH

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International Clinics. Edited by Henry W. Cattel, A.M., M.D., and others. Vol. 1, 37th series. Price $3.00 for one volume, $12.00 for the set of four. J. B. Lippincott Co., Montreal.

This volume includes the usual group of papers on medical and surgical subjects by men of prominence in both Europe and America. We note the quotation of Dr. Billings' famous advice to medical writers, "Have something to say, say it and stop," with the further comment, "Then give the article a proper title."

Should we be Vaccinated? Bernard J. Stern. 146 pages. Price $1.50. Harper & Bros., New York and London, 1927.

This is an interesting account of the history of vaccination and, based on this, an analysis of the reasons given for opposition to it. It is shown that those opposing vaccination are actuated by different motives. At first the advocates of vaccination were intolerant of all but unreserved acceptance of Jenner's contention and this provoked opposition on the part of physicians. This type of opposition naturally lessened, with enlightenment, but this was not enough to overcome the false medical concepts of laymen. The controversy is complicated by the employment of the vaccination controversy by those interested in selling patent cures.

Social Factors in Medical Progress. Bernard J. Stern. 136 pages. Price $2.25. Columbia University Press, New York, 1927.

Dr. Stern has gone further in this study and takes up the factors favouring opposition to the many advances in medicine, such as the work of Pasteur, of Holmes, Semmelweiss, and of Harvey. He has in mind such questions as, "To what extent and why are innovations or changes in culture resisted? What are the psychological factors involved in this resistance? Are gifted individuals responsible for progress?" These studies contain many illuminating details of medical history.

Venereal Disease. Its Prevention, Symptoms, and Treatment. Hugh Wansey Bayly, M.C. 242 pages, 77 illustrations. Price 10/6 net. Messrs. Faber & Gwyer, Ltd., London, 1927.

This is a concise and comprehensive review of a subject which cannot be brought before the student and practitioner in too clear and simple a manner. In Dr. Bayly's words, "It is an intolerable and illogical anachronism that the most easily controlled and most widespread, and, with the exception of tuberculosis, probably the most deadly of chronic infectious diseases, should be specially selected for exemption from regulations as to prevention, notification segregation, and enforced treatment. For these regulations would prove particularly efficacious in regard to syphilis."

This book has passed through two editions and can be thoroughly recommended for guidance in treatment.

Early Days of the Presbyterian Hospital in the City of New York. David Bryson Delavan, M.D. 191 pages, 34 illustrations. Published privately, 1926.

This is an acount of the founding of the Presbyterian Hospital, and contains a short account of the men and women whose lives were spent largely in its interests.

Medical Sciences for Everyday Use. Shields Warren, A.B., M.D. 178 pages. Price $2.00 Lea & Febiger, Philadelphia, 1927.

A pleasantly written book on a miscellany of medical subjects. Nothing is dealt with too technically—indeed the writing is very much in the vernacular—and yet the present day scientific views are presented with accuracy. H. E. MacDermot

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The Ætiology of Addisonian Anæmia.—It is well over 30 years since Herter postulated a relationship between the abnormal activities of *B. Weclhii* in the large intestine and the occurrence of pernicious or Addisonian anæmia. So completely has his work fallen into oblivion that in recent and authoritative English and German textbooks on diseases of the blood no mention of the theory is to be found; and in this country at any rate, the presence of hæmolytic streptococci in the duodenum attracts a large share of the attention of those who look upon the disease as an infection. The work of Cornell in Canada, published two years ago, indicated an attempt to rehabilitate Welch's bacillus as the only source and begetter of Addisonian anæmia, and have inspired efforts by several other investigators to establish a relationship. Thus Moench, Kahn, and Torry have shown that *B. Welchii* are present in the intestines of the sufferers from the disease in larger numbers than in those of normal persons, and by injecting into monkeys small quantities of toxin derived from the bacillus, Kahn and Torry were able to produce a blood picture closely resembling that of Addisonian anæmia. Following the lead of Cornell, who showed that it is possible to establish a chronic *B. Welchii* infection in rabbits, Reed, Orr and Burleigh working at Queen's University, Kingston, Canada, have observed the blood changes by the activity of this organism in the tissues of the host. By using cultures kept for five to ten days in the ice-chest, and injected hypodermically or intramuscularly into rabbits, they found that they were able to produce local lesions from which complete recovery frequently took place. The inception of the infective process was characterized by constant and well-marked changes in the blood picture. The notable change was a gross anæmia in which the red cells might fall as low as 1,400,000 per c.mm., and as this was not accompanied by a corresponding decrease in hæmoglobin the colour-index was relatively high. Some poikilocytosis was also observed, and a high degree of anisocytosis. Averages were taken of the size of the red cells, and curves were plotted showing the relative distribution of cells of various sizes. These curves differed grossly from those found in normal rabbits and approximated in their shape to

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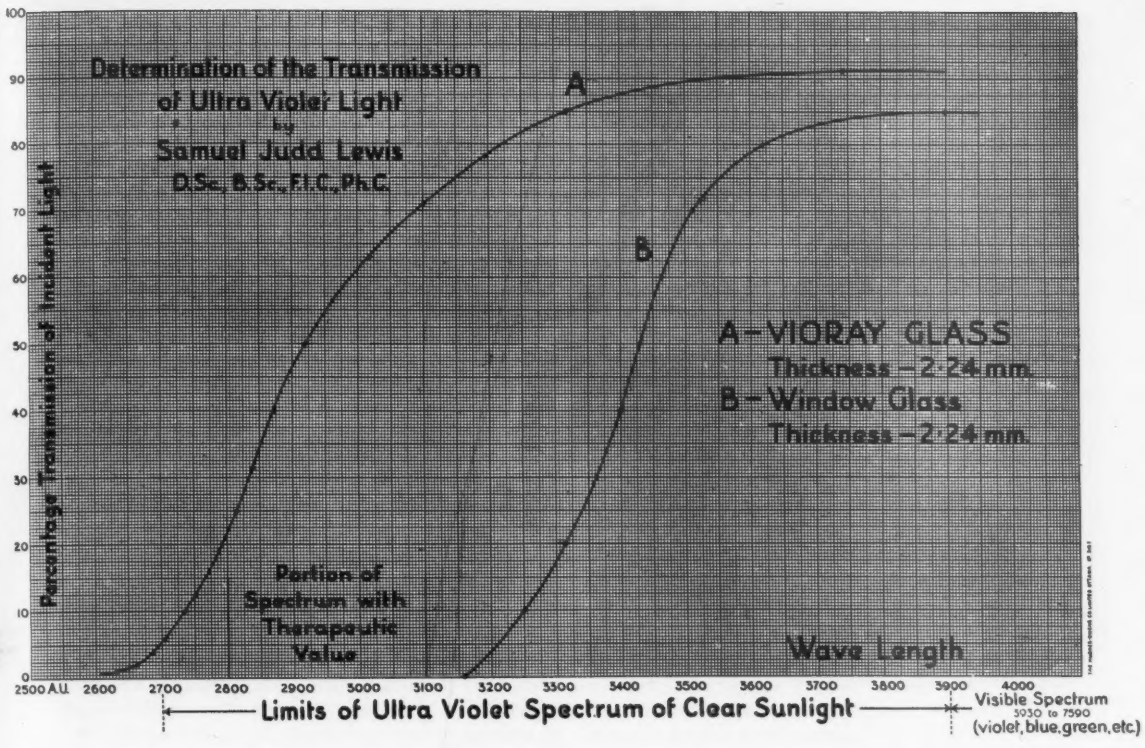
the curves shown by Price Jones to be characteristic of Addisonian anæmia. Films of blood from the infected rabbits further showed nucleated forms, many of which resembled the megaloblasts which are usually regarded as one of the most typical features of the blood picture in human pernicious anæmia. This, however, is the full extent of the resemblance between the blood of the infected rabbits and that found in the disease, and the rabbits showed a leucocytosis instead of the leucopenia which might have been expected. As no differential counts are recorded, it is impossible to say whether they had a relative lymphocytosis. These various investigations seem to show that in experimental animals the toxin of *B. Welchii* can be made to produce a blood picture characterized by a high colour-index, and a Price Jones curve resembling that of Addisonian anæmia. This, however, is far from proving that *B. Welchii* is the cause of the disease. The term "Addisonian anæmia" in the present state of our knowledge merely denotes a symptom complex which may have many causes. It is recognosed, for instance, that infestation by *Bothriocephalus latus* will give rise to the characteristic blood picture, but this does not mean that all patients having this blood picture are suffering from such infestation, and the same holds true for Welch's bacillus. None the less, this is a matter which will obviously repay further investigation. In view of the well-known fact that anæmia due to hæmorrhage will produce alteration in the size of the red cells in rabbits, it is probably desirable that such work should be conducted on some other animal, and since highly potent preparations both of *B. Welchii* toxin and antitoxin are now readily obtainable, no advantage is any longer likely to be gained by injection of the living organism.—The *Lancet*, March 19, 1927.

Unless there is complete confidence in the sympathetc understanding of the physician as well as in his professional skill, very little can be accomplished. The hospital has, indeed, the advantage that the entire reputation of the institution, and all that it represents in the way of facilities for diagnosis and treatment, go to enhance the confidence which the patient has in the individual physician who represents it. This gives the very young physician a hold on his patients that he could scarcely hope to have without its support. Another advantage is that hospital patients are removed from their usual environment, for the treatment of functional disturbances is often easier when patients are away from friends, relatives, home, work and, indeed, everything that is associated with their daily life. It is true that in a public ward one cannot obtain complete isolation in the sense that this is a part of the Weir Mitchell treatment, but the main object is accomplished if one has obtained the psychologic effect of isolation which comes with an entirely new and unaccustomed atmosphere. Disease in man is never exactly the same as disease in an experimental animal, for in man the disease at once affects and is affected by what we call the emotional life. Thus, the physician who attempts to take care of a patient while he neglects this factor is as unscientific as the investigator who neglects to control all the conditions that may affect his experiment. The good physician knows his patients through and through, and his knowledge is bought dearly. Time, sympathy and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient.—*Jour. A. M. A.* March 19, 1927..

Rose Bengal Test for Liver Function.—N. N. Epstein, G. D. Delprat and W. J. Kerr, San Francisco, describe a simplification of the technique of the rose bengal test, and review briefly the types of liver injury which may be revealed by a test of this kind. The technique described differs quite markedly from the original technique and offers the advantages of simplicity and accuracy. The artificial standard, made up by adding a known quantity of dye to the normal plasma of each individual has been abandoned, and a two minute sample is substituted as the standard. The other essential changes in the technique have been the elimination of the four minute sample, which does not give information of value, and the prolongation of the duration of the test from eight minutes to sixteen minutes. This increased length of time of observation lends more accuracy to the test and has the advantage of giving more information when the eight minute reading is at the borderline between normal and abnormal. Normal persons absorb rose Bengal through the liver from the blood stream very rapidly so that at the end of sixteen minutes only a trace remains in the blood plasma; that is, rarely more than 25 per cent of the amount injected. In chronic cholecystitis the elimination is usually within normal limits, and the test is not an aid in the diagnosis of the condition. In cases of obstructive jaundice, catarrhal jaundice and arsphenamine icterus, the delay in the elimination of the dye is always very definite, being greatest in obstructive jaundice. The test is a valuable aid in detecting these conditions and in following their clinical course. Before the jaundice begins to clear clinically, the improvement in the liver activity can be demonstrated by its increased ability to eliminate rose bengal. Following operations for the relief of obstruction of the common duct, the liver function improves markedly. The test may be used as an aid in determining the patency of a cholecystoduodenostomy, as the dye can be readily identified in the duodenal contents. It has proved very valuable in following the course of an arsphenamine hepatitis. In cirrhosis of the liver, the impairment of liver function is in direct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The measurements have been corrected for loss by reflection. The thickness of the specimen was 2.24 m.m.

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With reference to the glass advised in your letter of the 11th inst., we are forwarding you under separate cover the negative and six prints showing the absorption of these. The following is a note on the method adopted:

A condensed spark discharge was passed between Jones electrodes and an exposure of one minute given in each case. The absorption spectra were photographed on a Medium Quartz Spectrograph, size E3, using a Wellington Spectrum Panchromatic Plate. The approximate limit of a sunlight in the spectrum has been indicated on the plate, and this limit is the furthest that it is possible to attain, given ideal conditions. It will be seen that the glasses A and B transparent to ultra-violet light of still shorter wave-length. It should be observed that the glass plates were of different thickness.

Density (Extinction) Coefficient	Percentage of Light Transmitted	Wave Lengths
0.04	91	3745
.07	85	3320
.10	78	3196
.15	71	3099
.20	63	3020
.25	56	2972
.3	50	2915
.4	40	2870
.5	31.5	2839
.6	25	2813
.7	20	2789
.8	16	2772
.9	12.5	2751
1.0	10	2735
1.2	6.3	2706
1.4	4	2682
1.7	2	2661
2.0	1	2633

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relation to the amount of scarring in the liver and to the encroachment on the functional reserve of the liver. An advanced case of cirrhosis always shows a marked delay in the excretion of rose bengal. The test is of particular value in the differential diagnosis when ascites is the outstanding symptom. In cardiac failure, in tuberculous peritonitis and in carcinomatosis of the peritoneum, little change from the normal liver function has been noted, while on the other hand, when cirrhosis of the liver is present, there is a very marked impairment of liver function. In metastic malignancy of the liver, the conditions are variable and seem to depend on the amount of liver tissue which can function. Discrete scattered metastatic nodules in the liver do not interfere with its ability to eliminate the dye, but diffuse replacement of the liver tissue by carcinoma very definitely causes a retention of the dye in the blood stream. Chronic passive congestion of the liver does not seem to prevent the absorption of rose bengal, and the curves are within normal limits. Long continued treatment with arsphenamine and mercury does not disturb the liver activity. Arsphenamine dermatitis unaccompanied by icterus shows elimination of rose bengal within normal limits. In general, it may be seen that the rose bengal test for liver function gives results in direct proportion to the clinical and pathologic data noted in regard to the liver.—*Jour. A. M. A.* May 21, 1927.

Dry Air and Vital Capacity.—Medical climatology still remains for the most part in the stage of empiric observation. In the transfer of patients to selected regions, problems of change, rest and exercise are usually added to those that may be more strictly defined as climatic. The latter include questions of temperature, moisture and altitude, each of which involves special physiologic considerations. What are the criteria for selecting special climatic conditions in practice? They are admittedly dictated by experience and pragmatic circumstances far more often than by any convictions based on demonstrable scientific claims. Modern therapeutics needs more cogent indications for the allocation of patients to special resorts. An illustration of what is involved hereby has recently been presented by Leas of the Lakeside Hospital, Cleveland. He points out that climates with a low relative humidity are believed to give relief to some patients with asthma. Inferentially this is due, at least in part, to the beneficial effect of dry air, which will extract more moisture from the bronchial tree than the air of a locality with a higher humidity. If this is true in respect to the bronchial moisture of asthma, he adds, it should also be true in respect to bronchial moisture from other sources, such as cardiac and renal. The possibilities have been tested by determining the comparative vital capacity of patients before and after breathing dried air. The latter was secured by passing room air through anhydrous calcium chloride before it was inspired through the usual inhalation devices of a gas metabolism apparatus. It was assumed that dry air may increase the vital capacity by extracting a larger part of the bronchial moisture. Evidently the result depends on the pulmonary conditions. Obstruction to respiration in the bronchi is not always due to free moisture. Leas' measurements indicate that breathing dry air extracts enough of the moisture to increase temporarily the vital capacity in the majority of patients with bronchiolar edema, decreases the lung volume and number of râles, and produces a sense of subjective relief. However, if the vital capacity is reduced because of bronchial obstruction other than moisture, interstitial pulmonary edema or a rigid lung due to stasis, breathing dry air does not cause any change. The procedure, he states, may also be used to differentiate between those patients with asthma whose bronchial obstruction is due chiefly to moisture and not to hypertonus or hives and thus will be selective of cases in which the patients will improve, in all probability, in a drier climate. It is wise to remember the dictum that there is no excuse for sending away an asthmatic patient who carries a removable cause of asthma with him.—*Jour. A. M. A.* June 4, 1927.

Massive (Atelectatic) Collapse of Lung With Especial Reference to Treatment.—L. R. Sante, St. Louis, reports a case of gunshot wounds of the abdomen, pelvis and left wrist in which the abdomen was explored for possible perforation, but none was found. A chest film taken before operation did not show any evidence of a pathologic condition. Convalescence was uneventful until the fourth day after operation, when the patient complained of shortness of breath, and pain in the right half of the chest and in the region of the umbilicue. Physical examination at this time disclosed dense consolidation of the right lung; and since the temperature was somewhat elevated, 102°F., and the respiratory rate somewhat increased, 40 a minute, a diagnosis of postoperative pneumonia was made. Roentgenographic examination, however, revealed the characteristic condition of massive collapse, dense consolidation of the entire right lung, narrowing of the right side of the chest, approximation of the interspaces, and elevation of the diaphragm. The heart and mediastinal structure were displaced to the right side to such a degree that the heart was not visible to the left of the spine. The apex beat was best heard in the right anterior axillary line. While under fluoroscopic examination, the patient was instructed to roll back and forth on the uninvolved side, and to cough. In this instance, as in all others previously reported, the collapsed lung expanded during fluoroscopic examination. Within a very few minutes, almost complete reinflation was established.—*Jour. A. M. A.* May 14, 1927.